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THE RESEARCH MOVEMENT

Let us not talk in artificial language, but speak honestly and plainly. Does our kind reader admit that our languages should also claim a part of public attention. Patron of this Journal that he is, he necessarily thinks and feels that it is so. Then what about our ancient History and all the branches of study that require Indian brains for India's welfare? The answer is of course in the affirmative and all patriots are agreed as to the necessity of Indian activity in every department of useful work. We are not going to ask our public workers to leave their own branches of work and begin their activities in our field. It is folly to say so, or expect that it should be so. The question is however important, and if those that have their energies to spare for this cause, come not to do it even at this late hour, we cannot but say that they are—urgently required for this work.

Perhaps, there are few branches of activity that arouse no public interest as the one we have chosen. Not that the public do not like it; but that they are indifferent towards it. A few public men are no doubt engaged in this kind of work; a few associations are scattered here and there in this vast presidency—but they are like a drop in the ocean—are not felt by the public at large. What we want is a taste to be created in the public mind, in place of the indifference that now occupies it. We have to press our claims on public attention, and show that language and history, and research in intellec-

tual fields are the real elements on which the greatness of a nation rests. Our world is still in its midnight sleep though it has dawned elsewhere; and we must knock at the doors of the sleeping men to rouse them back to the world of light. We have to face the indifference outside, and slowly transform it to real taste and interest.

Such a work is possible only when we form regularly organised bodies in every part of this province. Libraries may do it; public lectures may do it; and regular classes under able Pandits may also do this very pressing work. The movement must any how be made to be felt, and people must know that there is something useful here also, which has long been left unnoticed.

If once the movement is felt and the enthusiasm of the public is roused, it catches like wild fire and the end in view is achieved in no long duration of time. Here then is the call to every patriot, who feels that there is a duty for this sacred cause, at once to rise to the gravity of the situation and translate his noble thoughts into action.

Talk of Research and its advantages! It is Research that made Europe what it is. It is Research again that made ancient India, the greatest and holiest of ancient lands. To work for the cause of our sacred motherland is no mean task, and he is blessed who feels that he has a call to duty which he should obey.

We of Southern India, that produced a *Sankara*, the greatest of world's thinkers have no mean heritage to be ashamed of, and if we were an intellectual and historical nation in the past, we are, if we choose, no less so in the present times.

A gem that is hidden showeth not its lustre, and a cause that is not worked up bringeth not any good fruit. Of what earthly use is all this intellectual energy that man has inherited, what use this love, and sympathy, if one moves not his little finger for serving a cause as holy as anything else. Take up the subject, dive deep into its mysteries, and unearth

therefrom the precious stuff for which you have toiled.

If you talk of Research to your friends, if you converse with them about your achievements in it and your difficulties and failures, if you place before them the advantages therein found— You are unconsciously attracting the public mind to you and to your holy cause. Even the Gita speaks of effort as a necessary condition for a result. Why then should we not start Literary Societies in every place where there is one who is interested.

THE INDO-ARYANS : THEIR PRE-HISTORIC VICISSITUDES. I. (FROM IRANIAN SOURCES)

Perhaps at the last glacial epoch, ten thousand years ago, perhaps later still, say some three or five thousand years ago, a community of the Aryan Race lived together, speaking the same language, and worshipping the same Gods. These ancient Aryan people counted their years by the Winters, and they were a pastoral tribe tending to their flocks. They had a complicated system of Sacrifices. Agni, Varuna, Yama, Vayu and Mithra were some of the Gods when they worshipped. They were Asuras some of them and some of them were called the Devas, the Yatus, and the *Pairekas*. They were on friendly relations with each other and kept the rituals and the sacrifices. Their numbers increased and the Parsi Sacred Legends affirm that once every three hundred years, they extended conquests southwards towards the sun (equator). As time went on the Asuras became more prosperous than the Devas; and for some unknown reason the two sections became deadly enemies to each other. The Asura then became to the Hindu, a type of the grossest wickedness, cruelty and mischief as the Deva was to the Asura.

It is here that the History of the Zend Avetsa and the later portions of the Rig Veda begin and let us follow the thread of similarities between the two religions, and note down the points necessary for historical purposes. —

(i) THE PARSIS.

"I cease to be a Deva (worshipper). I profess to be a Zoroastrian Mazdayasnian, an enemy of the Devas, a devotee of Asura, a praiser of the immortal benefactors.....4 I forsake the Devas, the wicked, bad, wrongful originators of mischief, the most baneful, destructive and basest of beings. I forsake the Devas and those like the Devas, the Sorcerers and those like Sorcerers, and any beings whatever of such kinds. I forsake them with thoughts, words and deeds. I forsake them hereby publicly and declare that all lie and falsehood is to be done away with" So says the *Yacna Haftan—Haite* (XII 1 & 4) — a sacred book of Parsis. If the Devas are to be rejected, whom then are they to worship? The Asuras or *Ahuras*.....as they are called :

These are the beings to be worshipped by the Parsis. "I praise.....the Ahuryan Religion", says the Yacna, "which is the greatest, best, and most prosperous of all that are and that will be". True to the sacred text, the Parsis are the most prosperous and the most civilised of Indian communities to day; in education, trade, and wealth, and public charities they rank among the foremost nations on earth. It is to this venerable Aryan community that we may direct our thoughts now, as in their ancient history is involved a point, most interesting to us of India and perhaps to all the Aryan peoples in the world.

The quotation from the Yacna clearly proves that when the religion of the Parsis was first established by Zoroaster, the two Aryan communities representing the Devas and the Asuras became distinct societies, each the mortal enemy of the other.

(ii) WHO ARE ASURAS.

But the Word *Asura* was one of the most respectable of epithets in the Rig Veda. The Vedic Dieties were not merely Dieties, they were Asuras. It was to *Asura* Agni, *Asura* Indra, *Asura* Savitar, that Riks were sung and *Asura* was in early Rig Vedic Times a term by which the Gods were addressed. In contrast to this happy early conception, we find the latter religious literature of India using *Asura* as typical of all that is bad. It thus becomes clear that

(1) The Parsi Religious Texts never knew of Asuras except as Gods.

(2) The Hindu Vedas know a happy conception of *Asura*; as also in latter times the conception that they are the enemies of Gods.

The following Vedic Texts will illustrate the point;—

TO INDRA or the Vritraha of the Vedas, the Verethraghna of the Parsi scriptures.

"Sing forth to lofty Dyaus, strength-bestowing song, the bold whose resolute mind hath independent sway. High glory hath the *Asura*, for his chariot, wrought firmly is passing strong drawn onward by bay steeds."

Rig Veda I-54—3

TO VARUNA:—

"With bending down, oblations, sacrifices, O Varuna, we deprecate thine anger:

"Wise *Asura*, thou, King of wide dominion, loosen the bonds of sin by us committed."

Rig Veda I-24—14

TO AGNI:—

"Agni, be this our sacrifice eternal, with brave friends, rich in kine and sheep and horses,

"Rich *Asura*! in sacred food and children in full assembly, wealth, broadbased and during"

Rig Veda IV-2—5

"We will extol at sacrifice for ever as men may do, Agni, whom Manu kindled,

"You very skilful *Asura*, meet for worship envoy between both worlds, the truthful speaker"

Rig Veda VII-2—3.

TO SAVITAR:—

"He, strong of wing, hath lightened up the regions, deep-quivering *Asura*, the gentle leader.

"Where now is Surya, where is one to tell us to what celestial sphere his ray hath wandered?"

Rig Veda I-35—7

TO RUDRA:—

"Praise him, whose bow is strong and sure his arrow, him, who is lord of every balm that healeth.

"Worship thou Rudra, for his great good favour, Adore the God *Asura*, with prostrations."

Rig Veda V-42—11

TO ALL GODS:—

"This Soma is to be distributed as an offering among the *Asuras*"

Rig Veda I-100—6

Dr. Haug observes: "In a bad sense we find *Asura* twice in the older parts of the Rig Veda (II-32, 4, VII 99, 5) in which passages, "the defeat of the sons or men of *Asura* is ordered or spoken of: but we find the word more frequently in this sense in the last book of the Rig Veda (which is only an appendix to the whole, made in later times), and in the Atharva Veda, where the Rishis are said to have frustrated the tricks of the *Asuras* (IV 23 5) and to have the power of putting them down. (VI-7, 2)."

Speaking of the Religion of the great Parsi community, Sir William Rawlinson observes "In the Gathas, which belong to a very remote era indeed, we seem to have the first beginnings of religion. We may indeed go back by their aid to a time anterior to themselves,—a time when the Aryan race was not yet separated into two branches, and the Easterns and the Westerns, the Indians and Iranians, had not yet adopted the conflicting creeds of Zoroastrianism and Brahminism. At that remote period, we seem to see prevailing a polytheistic nature worship, — a recognition of various divine beings called indifferently *Asuras* (*Ahuras*) or *Devas*, each independent of the rest, and all seemingly nature powers rather than persons, whereof the chief are Indra, Storm or Thunder, Mithra, Sunlight; Aramaiti, Earth; Vayu, Wind; Agni Fire, and Soma (Homa) Intoxication. Worship is conducted by priests, who are called Kavi, *seers*, *Karapani*, sacrificers, *Ricikhs*, "wise men." It consists of hymns in honour of the gods; sac-

rifices, bloody and unbloody, some portion of which is burnt upon an altar; and a peculiar ceremony called that of Soma, in which an intoxicating liquor is offered to the gods, and then consumed by the priests, who drink till they are drunken."

(iii) THE PANTHEON.

It may be interesting to note that what we call *Yagna* is in the Parsi Texts called *Yacna*; *Asura* is *Ahura*; *Mithra* is *Mitra*. *Indra*, *Indra*; *Aryaman*, *Aryaman*; *Bhaga* is *Bagha*; *Vayu*, *Vayu*; *Vruthraha*, *Venthraghat*, *Brahman* *Bahman*. We may have to quote volumes of Texts from the Hindu and the Parsi Scriptures, if we should attempt to show their common background. A few quotations from the Parsi writings more than illustrate that the Indians and the Iranians belonged to a common race speaking the same language and worshipping the same Gods. Thus for instance:

Ram Yasht is a Yast of the Avesta.* It is a whole book dedicated to *Vayu* worship. It begins with

"Unto Rama Hvāstra, unto Vayu, who works highly and is more powerful to afflict than all other creatures."

Mr. Darmesteter condenses the contents of this Yasht thus:—

"This Yast can be divided into two parts. The first part (I—140) contains an enumeration of worshippers who sacrificed to Vayu: Ahura mazda (2) Haoshyangha (7) Takhma Urupa (11) Yima (15), Azi Dahaka (19), Thraetaona (23), Karesāspa (27), Aurvasāra (31), Hutaosa (35), and Iranian maids (39). The second part contains a special enumeration and glorification of the many names of Vayu. (42—50)."

Regarding Yatus, demons, (who are demons even in the Vedas) the Haptan Yast says

"Let the Yatus be crushed O Zarathustra, both Daevas and men"

In Vendidad VIII H. 79—80 we have a similar reference, where the Yatus are grouped with Devas, and Pairikas (Apsarasas.) Thus;—

‘ If a man shall then piously bring into the fire, O Spitama Zarathustra ! Wood of Urvāna or Vohu Giona or Vohu Kereti..... or any other sweet smelling wood, wheresoever the wind shall bring the perfume of fire, there unto Fire, the son of Ahura Mazda, shall go and kill thousands of unseen Daevas, thousands of fiends, the brood of darkness, thousands of Couples of Yatus and Pairikas.

Dr. Martin Haug observes “ A very remarkable coincidence as to the number of Divine beings worshipped, is to be found between the statements of the Vedas and the Zend Avesta.....In the Aitereya Brāhmanam, they are enumerated in the following order, Eight *Vāsavas*, eleven *Rudras*, twelve *Adityas*, one *Prajāpati*, and one *Vashatkāra*. Instead of the last two we find *Dyāvā Prithivi* (heaven and earth) enumerated in the *Shatapatha Brahmanam*.....In another passage of the same work, we find *Indra* and *Prajāpati* mentioned as the last two, in the *Ramayana*, the two *Aswins* are mentioned instead of them. In the *Atharva Veda*, all the thirty three Gods are said to be included in *Prajāpati* (Brahma) as his limbs.

“ With these thirty three Devas of the Vedas we may compare the thirty three *Ratus*, or chiefs, for maintaining the best truths, as they are instituted by Mazda, and promulgated by Zarathustra.”

(iv) LANGUAGE

It was not only in the Dieties worshipped but also in the very Language and the Metres employed that this similarity is seen.

As to the Metres used in the Gathas

“ We find them of the same nature as those which are to be found in the Vedic hymns. No rhyme is observed, only the syllables are counted, without much attention being paid to their quantity. The five collections into which the

Gathas have been brought, exhibit each a different metre. Verses of the same metre were put together, irrespective of their contents. So the first Gatha contains verses each of which consists of forty-eight syllables; in the second the metre is of fifty-five syllables; in the third of forty-four etc ”

Regarding the language and thought of the Parsi Texts the following observations of Mr. Darmesteter are of great value :—

“ The deeper one penetrated into the oldest form of Indian words and thoughts, the more striking appeared its close affinity with the Avesta words and thoughts. Many a mysterious line in the Avesta received an unlooked-for light, from the poems of the Indian Rishis ; and the long-forgotten past and the origin of many gods and heroes, whom the Parsi worships and extols without knowing who they were and whence they came, were suddenly revealed by the Vedas. The key to the Avesta was not the Pehlavi but the Veda. The Avesta and the Veda are two echoes of one and the same voice, the reflex of one and the same thought. The Vedas therefore are both the best lexicon and the best commentary to the Avesta ”

To this view taken by a certain class of scholars, Mr. Darmesteter observes that the following reply is given :—

“ The traditional school replied that translating Zend by means of Sanskrit and the Avesta by means of the Vedas because Zend and Avesta are closely related to Sanskrit and the Veda, is forgetting that relationship is not identical and that what interests the Zend scholar is not to know how far Zend agrees with Sanskrit, but what it is in itself ; What he seeks for in the Avesta is the Avesta, not the Veda.”

(v) THE LEGEND OF YAMA

It thus becomes clear that even after the separation, the followers of the Asuras, and those of the Devas observed the same forms of worship and spoke a common allied language,

It has already been found that certain hymns are word for word common to the Veda and to the Avesta while the ritual was invariably the same. The language of the Avesta and even of the Gathas represents a very early type. It is yet a dialect of Vedic Sanskrit, which is earlier than the language of the Gathas. We thus see that the Indian Aryans and the Iranians were at one time a single clan speaking the same language and following the same religion. Even the legends of the two nations are identical. In later times, these legends were recast by the two communities and we shall give below the Legend of Yima from the Parsi Texts to show how well the traditions of India are verified by the Vendidad. We know that Yama is the Lord of the South, and that he is the son of Vivaswanta, the Sun. He is to the Hindus the Presiding Deity over death and is the most dreaded of all Gods. This Yama is Yima, of the Vendidad, and he is the son of Vivanghat. Yama is the first of men, according to the Parsi Scriptures.

Zarathustra asked Ahura Mazda "who was the first Mortal before myself." Ahura Mazda answered "the fair Yima, the great shepherd, he was the first mortal." "Unto him, I, Ahura Mazda spake saying 'well fair Yima, son of Vivanghat, be thou the preacher and the bearer of my law!' And the fair Yima replied 'I was not born, I was not taught to be the preacher and bearer of thy law.' Then I, Ahura Mazda said 'Since thou wantest not to be the preacher and the bearer of my law, then make thou my worlds thrive, make my worlds increase, undertake thou to nourish, to rule and to watch over my world.'"

To us, Indians, Yama is the Lord of the South. Yima of Vendidad extended himself to the South thus :—

"Thus under the Sway of Yima, three hundred Winters passed away, and the earth was replenished with flocks and herds, with men and dogs and birds.....and there was no more room for flocks, herds and men."

Then Ahura Mazda warned Yima-

"Then Yima stepped forward towards the luminous place, *Southwards*, to meet the Sun, and afterwards he pressed the earth with the golden ring and bored it with the poniard, speaking thus :

"O Spenta Armaiti, Kindly open asunder and stretch thyself afar, to bear flocks and herds and men.

"And Yima made the earth grow larger by one-third than it was before.....

"Thus under the sway of Yima Six hundred winters passed away and the earth was replenished.....and there was no more room for flocks, herds and men."

And Ahura Mazda warned him again.

"Then Yima stepped forward towards the luminous space, *Southwards* to meet the Sun and (afterward.) he pressed the earth with the golden ring and bored it with the poniard, speaking thus :

"O Spenta Armaiti, Kindly open asunder and stretch thyself afar to bear flocks and herds and men.

"And Yima made the earth grow by two-thirds than it was before.....

"Thus under the sway of Yima, nine hundred Winters passed away and the earth was replenished..... and there was no more room for flocks, herds and men.

And Ahura Mazda warned him again.

"Then Yima stepped forward towards the luminous space *southwards* to meet the Sun and afterwards he pressed the earth with the golden ring and bored it with the poniard speaking thus :

"O Spenta Armaiti, kindly open asunder and stretch thyself afar to bear flocks and herds and men.

"And Yima made the earth grow larger by three-thirds than it was before"

(vi) THE STORY OF THE GLACIAL EPOCH.

After Yima thus made the earth grow three-thirds towards the South, "the Maker Ahura Mazda, of high renown, in the Airyana Vaego, by the good river. Daitya called together a meeting of celestial gods.

"The fair Yima, the good shepherd, of high renown in the Airyana Vaego, by the good river Daitya, called together a meeting of the excellent mortals.

"To that meeting came Ahura Mazda, of high renown in the Airyana Vaego, by the good river Daitya; he came together with the celestial angels.

"To that meeting came the fair Yima, the good shepherd of high renown in the Airyana Vaego, by the good river, Daitya, he came together with the excellent mortals.

"And Ahura Mazda spoke unto Yima saying

"O fair Yima, son of Vivanghat! upon the material world the fatal winters are going to fall; that shall bring the fierce foul frost, upon the material world, the fatal winters are going to fall that shall make snow flakes fall thick even an aredvi deep on the highest tops of mountains.

"And all the sorts of beasts shall perish, those that live in the wilderness, and those that live on the tops of mountains, and those that live in the bosom of the dale, under the shelter of stables.

* * * *

"Therefore make the Vara, long as a riding ground on every side of the square and thither bring the seeds of sheep and oxen, of men, of dogs, and of red blazing fires.

* * * *

"And Yima made a Vara, long as a riding ground on every side a square. There he brought the seeds of sheep and oxen, of men, of dogs, of birds, and of red blazing fires.....

* * * *

"Every fortieth year, to every couple two are born, a male and a female. And thus it is for every sort of cattle. And the men in the Vara which Yima made live the happiest life."

(vii) THE WAR BETWEEN THE DEVAS AND THE ASURAS IS HISTORICAL.

We are thus led by the internal evidences from the Vedas and the Parsi sacred Texts to conclude that long before Rig Vedic times, the two communities formed a single tribe. For some unknown reason factions were created between the two and one of deadliest of wars known to ancient history was then fought. The war between the Devas and the Asuras is not like the wars of the present day, but one that kept alive their feelings of mutual hatred to one another for all time to come. The Hindu feels this great war as though it was one in which the type of Vice was crushed by Virtue as the Parsi feels in his own case. Tradition has preserved us its memory and the war itself broke the Aryan communities into two distinct sections, the Iranian and the Indian and perpetuated their difference for thousands of years, perhaps for ever. The Devas and the Asuras though of one common Aryan descent thus became too distinct Communities that in the thousands of years since passed away became what history made them to be.

The wonderful corroboration of this war both by the Hindu Scriptures and by those of the Zoroastrians is proof positive that the proverbial *Devasura yuddham* of the Puranas is a real actual point of history that was fought some four thousand years ago, if not earlier. We quote below an account of the war from the Brahmanas, that it may be nearer the truth than a Puranic version of it. The Aitare-

ya Brahmana, one of the oldest of the Brahmanas and supposed to belong to at least 1100 B.C gives a traditional account of this war thus:—

“ The Devas and Asuras waged war in these worlds. The Asuras made these worlds fortified places (*pur* i. e. polis town) and made them as strong and impregnable as possible ; they made the earth of iron, air of silver, and the sky of gold. Thus they transformed these worlds into fortified places. The Devas said ; ‘ These Asuras have made these worlds fortified places ; let us thus build other worlds in opposition to these (now occupied solely by them.) They then made out of her (the earth) a seat, out of the air a fire hearth ; and out of the sky two repositories for sacrificial food (these are called *Havirdhana*). The Devas said : Let us bring the *Upasads*; by means of a siege (*Upasada*) one may conquer a large town. When they performed the first *Upasad*, then they drove them (the Asuras) out from this world (the earth) ; when they performed the second, then they drove them out from the air ; and when they formed the third then they drove them out from the sky. Thus they drove them out from these worlds. The Asuras thus driven out of these worlds, repaired to the Ritus (Seasons). The Devas said : Let us perform *Upasad*. The upasads being three they performed each twice ... then they drove them (the Asuras) out from the Ritus. The Asuras repaired now to the months. The Devas made twelve Upasads and drove them out from the months. After having been defeated here also they repaired to the half-months. The Devas performed twenty four Upasads and drove the Asuras out of the half-months. After having been defeated again, the Asuras repaired to the day and night ; the

Devas performed the Upasads and drove them out. Therefore the first Upasad ceremony is to be performed in the first part of the day and the other in the second part of the day. He (the sacrificer) leaves thus only so much space to the enemy as exists between the conjunction of day and night (that is the time of twilight in the morning and evening).’

The war between the Devas and the Asuras is referred to in the Pehlavi Text Bundahis thus :—

“ And afterwards, he (the evil spirit) came to fire and he mingled smoke and darkness with it. 25. The planets with many demons dashed against the celestial sphere and they mixed the constellations ; and the whole creation was as disfigured as though fire disfigured every place and smoke arose over it. 26. And ninety days and nights the heavenly angels were contending in the world with the confederate demons of the evil spirit and hurled them confounded to hell ; and the rampart of the sky was formed so that the adversary should not be able to mingle with it.” *Bundahis* III 24—27

These evidences thus establish, that ages ago the Hindus and the Iranians were a single tribe speaking the same language and worshipping the same Gods. After a time there was a great war between the Devas and the Asuras and the tribe became divided into two distinct branches the Indians and the Iranians. The age of Rigveda is not settled beyond doubt, and the Aryan and Iranian traditions lead us back to a date earlier than the Rigveda when they lived as one single tribe. Let us study some more Iranian affinities before drawing inferences from them.

INTER-RELATIONS OF KANARESE AND TELUGU.

Where Sanskrit Words are brought without a change into the languages of Southern India, there is no question as to the alteration of Sounds. These words go by the name of Tatsamams. Where however the words of Sanskrit have in their passage to the languages of Southern India undergone Phonetic changes we have a clue as to the nature of South Indian Vocal organs and a sound anatomist may from the nature of the utterances map out the Vocal organs of our ancient countrymen. It is therefore necessary to see what the nature of sound changes is. It is easier to proceed from one language to another in regular order and then tabulate the results in respect of all these languages together.

The Grammarians of Kanarese have in this respect done much good work. While Telugu and Tamil stand without systematised rules for a comprehensive derivation of words from Sanskrit, the Kanarese Grammarian Bhattakalanka Deva has in his splendid book *Karnātaka Sabdānusāsanam* devoted a number of Sutrams for this important work. A grasp of his rules gives us the nature of change from Sanskrit to Kanarese and enables us to effect a comparison with Telugu and Tamil.

(1) *Ya of Sanskrit becomes the Kanarese Ja.*

Yāga Jāga; Yogi Jogi; Yuddha Judda; Yavaka Javaka; Duryodhana Dujjodana; Yava Jave.

But when we go to Telugu the rule that Ya becomes Ja applies equally well. But the words that have been exemplified for Kanarese are not acceptable to the Telugu Grammarian. The Telugu Grammarian uses Yaga, Yuddha, Duryodhana and Yave as they are in Sanskrit but does not form derivatives from them. On the other hand he has

Yagna Janna; Yaksha Jakkula; yogi Jogi; Yavanike Javanike Yama . Jama; Youvana Javvana; yamuna Jamuna; yodha jodu all of which are admissible in Kanarese.

It is thus seen that so far as the mouths of people are concerned the change from ya to Ja is common. As for the words that so changed, Kanarese has forms not admissible into Telugu and some of the Telugu derivatives are not to be admissible into Kanarese.

(2) The second letter of the Varga changes into the first. It means that the Sanskrit sounds kh, chh, th, thh, and ph become k, ch, t, th and p

| | |
|--------------------|------------------|
| Khadira Kadira | Matha Mata |
| Khala Kala | Kuntha Kunta |
| Khanda Kanda | Kathe Kate |
| Khasa Kasa | Kanthe Kante |
| Nakha Naka | Pantha Panta |
| Chhanda Chanda | Mithile Mitile |
| Chhinna Chinna | Patha Pata |
| Chhavi Chavi | Phala Pala |
| Chhandasa Chandasa | Phāla Pāla |
| Chhanna Channa | Phani Pani |
| Kanthike Kantike | Kapha Kapa |
| Sunthi Sunti | Gumphana Gumpana |

The rule is good enough in Kanarese. But it should be noted that not a single example given above applies to Telugu. However the rule applies to Telugu also. "The second letter of a Varga becomes," in Telugu also "the first," but in a different set of words. Thus

| | |
|--------------------|--------------------|
| Kharjūra Kajjuramu | Vritṭa |
| Khattika Katika | Tamatha Tāmatanu |
| Khatwa Kattiya | Patha Patamu |
| Kharwa Karavu | Sthhalika Tājiga |
| Khalina Kallamu | Sthhāna Tānamu |
| Khēta Kēdamu | Sthhāpana Tāpanamu |
| Khetaka Kēvadamu | Sthhāvāra Tavaramu |

Chhidra Chirugu
Chhurika Chūra
Katha Kaṭā

Sphatikā Patika
Paithha Paita

Khani Gani

Khurali Garadi

Ghimkara Gika

Kumudikā Gumudu

Kūshmanda Gummadi

Jamghata Jamjaṭa

Jatā Jada

Kachha Gōchi

Ghōtika Gōdiga

Kudya Goda

Kuruvaka Gōrinka

Kuṭhara Goddaji

Jhalliri Jālaru

Dhakkā Dakka

Dambhika Dambika

Dirghika Diggiya

Dridha Dītavu

Toola Doodi

Tumula Dommi

Sidhili Chedalu

Gandhōji Kaṇuduru

Bandha Bande

Gandha Gandamu

Tālu Doudi

Several of these words are again admissible into Kanarese. In fact some of them are used by many classical authors.

(3) The first and fourth letters of a Varga become the third letter. Thus K and gh become g ; ch and jh j ; t and dh d ; th and ḍh ḍ and p and bh b. Thus

Vāsuki Vāsugi

Māgha Māga

Damarukam Damaruga

Saṅgha Saṅga

Aṭara Agara

[m]Jhanke Jange

Mallike Mallige

Jhakata Jagala

Jirike Jirige

Jhampe Jampe

Sūchi Suji

Jhaditi Jaditi

Mochana Mojana

Jhasha Jasa

Vache Baje

Dhakke Dakke

Vachane Bajene

Dādha Gāda

Sanchaya Sanjaya

Rudhi Rudi

Kōte Gōde

Shanda Sanda

Makuta Maguda

Dridha Dida

Aṭavi Adavi

Dhana Dana

Tata Dada

Dharma Daruma

Jāti Jādi

Dhare Dare

Duti Dudi

Nidhi Nidi

Vasati Basadi

Sādha Sādaka

Chatura Chadura

Bhairava Bairava

Kaitava Kaidava

Bhogi Bogi

Ghante Gante

Bhaya Baya

Ghate Gate

Sambhu Sambu

Oghna Oga

Sobhe Sōbe

Most of the above Vikrities are not admissible in Telugu. The admissible forms are italicised. The rule however holds in Telugu for the second and fourth Varga letters the third letter appears in the following cases. Thus

Mukha Mugamu

Kubga Gujju

Sikha Siga

Ketaki Gethagi

Megha Mogilu

Khura Gorije

Kach-ha Gajji

Ghūka Guba

Ghatana Gadana

Kurantaka Gorinta

Ghatika Gadiya

Sphata Padaga

Kathina Gadusu

Chana Jāna

A number of these forms are not admissible in Kanarese. It is thus seen that in these cases the nature of the mouths that uttered Sanskrit words is in basis the same, but the individual words themselves underwent changes differently in Kanarese and Telugu. Let us examine a few more types of change.

(4) B and m change into v.

Kavala Kavala

Gramma Grava

Bandhana Vandana

Sanba Sanva

Kunkuma Kunkuva

Kama Kawa

Sibike Sivike

Yama Java

Vibadha Vivada

Bhima Biva

Only one of these words is admissible in Telugu Kavala. And according to the Sanskrit rule Vabjayorabhedah which applies to all Indian Languages v and b interchange. This is however applicable to v becoming b, but not b into v. The rule of m changing into v is not however unknown to Telugu. We have thus:

Hima Ivamu

Chāmara Savaramu

Prema Prevu

Samata Savatu

Ramya Ravana

Baka Vakku

Chamari Savara

The opposite rule is also true in Telugu as in Sēvanti Chēmanti, Prithivi Pudami. In some cases n becomes v in Telugu as Sthāna Thavu

(5) V changes into b.

The change of v into b can be amply illustrated in Telugu

| | |
|---------------------|--------------------|
| Vyavahara Bēharam | Vase Base |
| Urthhwaswāsa Ubbasa | Vasanta Basanta |
| Vira Bīramu | [mu]Vrida Bidiyamu |
| Vetrā Bettamu | Vikāra Bikari |
| Gaurava Gārabanu | |

The Kanarese examples are

| | |
|-------------------|-------------|
| Vanchane Banchane | Vega Bega ; |
| Vrishabha Basava | Vine Bine |
| Dēva Dēbe | |

(6) The next rule says that P becomes h.

Gopura Gohura. This change is however very rare in words derived from Sanskrit into Telugu.

(7) The next rule is that a double consonant splits up into the two distinct consonants of which it is made.

| | |
|------------------|--------------|
| Yatnā Yatana | Sri Siri |
| Indra Indara | Hri Hiri |
| Prasna Parasana | Mukti Mukuti |
| Vrata Varata | Yukti Yukuti |
| Srama Sarama | Alpa Alupa |
| Varsha Varisa | Yugma Jaguma |
| Chandra Chandira | Arha Aruha |
| Mandra Mandira | |

Only one of these fifteen Examples is applicable to Telugu namely Siri. The rule is however applicable to Telugu though the words undergoing change are different. Thus

| | |
|--------------------|-----------------------|
| Lagna Lagana | Tandra Tandara |
| Chitra Chittaruvu | Sparsavedi Parasavedi |
| Asraya Asarā | Parva Paruvu |
| Garva Garuvamu | Tivra Tivara |
| Dwipata Duppati | Rātri Rātiri |
| Patri Pattiri | Kashta Kasatu |
| Nidrā Nidura | Dabhra Dabbara |
| Chandra Chandurudu | Mugtha Muguda |
| Iswara Isara | |

(8) S is dropped where it occurs combined into a double consonant with th, p, ph, b, bh.

| | |
|---------------|----------------|
| Samsthe Sante | Stoba Toba |
| Sthana Tana | Stobana Tobana |

| | |
|-------------------|-------------------|
| Sthithi Teti | Stuti Tuti |
| Sthandila Tandila | Stavana Tavana |
| Avasthe Avate | Stimita Tēmita |
| Sparsa Parusa | Stoma Toma |
| Sphatika Patika | Stava Tava |
| Sphikke Hikke | Sphurana Purana |
| Sthuti Tuti | Smarana Marana |
| Spakka Posaka | Sphara Para |
| Sphikka Pikka | Skandana Kandana |
| Sphālana Palana | Stamba Tamba |
| Spandana Pandana | Stambhana Tambana |
| Skanda Kanda | |

Most of these words are not admissible in Telugu. The rule is however the same and indicates that the nature of the mouths is the same. We have thus in Telugu

| | |
|-----------------|-----------------------|
| Sthālīka Taliga | Sparsavedi Parisavedi |
| Stana Tana | Sphotaka Potakamu |
| Sthavara Tavana | Pushpa Puppamu |
| Sthira Tira | Sprikka Pakke |
| Swargga Sagga | Sphatika Patike |
| Swami Sami | Smasana Masanamu |
| Sphata Padaga | Smara Marudu |

(9) V following S is dropped

| | |
|-------------------|-----------------------|
| Svargga Sagga | Svāna Sāna |
| Swami Sami | Svēta Seta |
| Svayambhu Sayambu | Sāsvata Sasata |
| Svabhu Sobu | Iswara Isara |
| Svara Sara | Parishwanga Parisanga |
| Tapasvi Tapasi | Abhishwanga Abisanga |

Of these words only the three italicised are admissible in Telugu. The rule however applies as well to Telugu as it is to Kanarese.

(10) Dhya changes to ja. Vindhya ja, Vandhya Bange; Sandhya Sanje; Dhyan Jana. The italicised alone is admissible in Telugu and thus proves the rule.

(11) R is dropped in compound letters containing it. In some cases the preceding nant of this compound letter is doubled.

| | |
|--------------|----------------|
| Vargga Vagga | Chandra Chanda |
|--------------|----------------|

| | |
|-------------------------|-----------------|
| Vartti Batti | Mudrika Muddige |
| <i>Karthari Kathari</i> | Nidra Nidde |
| Markata Makkada | Patrike Hattige |
| Droni Doni | Vetra Bette |
| Sreṇi Seni | Vapra Bappa |
| Sroni Soni | |

The italicised words are admissible in Telugu. Kattari is however Kattera. The rule is however applicable to both the languages. The following examples will suffice.

| | |
|--------------------|---------------------|
| Kurkura Kukka | Chitrā Chitta |
| Kūrpasa Kubusa | Sūrpāṇakha Chuppanā |
| Karpara Koppera | Chakravaka Jakkava |
| Karpūra Kappura | Dirghika Diggiya |
| Kharjūra Kajjuramu | Trighata Tegada |
| Garva Goppa | Nirbhara Nibbara |
| Trilinga Telungu | Nirvaha Nivva(tilu) |
| Droni Donne | Varṇa Vanne |
| Nisrēṇi Nichchena | Patra Pattiri |
| Nidra Niddura | Brahma Bamma |
| Prāya Pāyamu | Vridā Bidiyamar |
| Chathurthi Chaviti | |

(12) When preceded by a short vowel Ksha becomes k and in some cases Kka; in some cases previous vowel is shortened when Kka is formed.

| | |
|--------------------|---------------------|
| <i>Kshāra kara</i> | Bhikshe Bikke |
| Kshira Kira | Lakshana Lakkana |
| Bhaiksha Baika | <i>Paksha Pakka</i> |
| Dikshe Dike | Sākshi Sakki |
| Kshēpana Kēpana | Prēkshana Pekkana |
| Rakshe Rakke | Rakshasa Rakkasa |
| Akshara Akkara | |

The rule is true in Telugu also. However among the examples given the italicised words above are admissible in Telugu. The following are examples of a similar change.

| | |
|----------------------------|---------------------|
| Aksharam Akkaramu | Pariksha Parikimchu |
| <i>Kakshapāla Kakapāla</i> | Lāksha Lakka |
| Choksham Chokkamu | Sākshī Sakiri |
| <i>Yakshah Jakkulu</i> | Riksham Rikka |

There are however exceptions to this rule in these Telugu words.

| | |
|--------------------|---------------------|
| Bhiksha Bechhamu | Lakshmi Lachchi |
| Lakshāṇam Lachcha- | Kshēmam Sēmamu |
| | [namu Kaksha Kaccha |

(13) Initial u of a letter changes to O.

| | |
|---------------|------------------|
| Kunda Konda | Bhujanga Bojanga |
| Kunta Konta | Sukha Soga |
| Tuvari Tovari | Subhāga Sobāga |

The rule is true in Telugu also, though none of the above words is admissible into Telugu thus :

| | |
|--------------------|----------------|
| Sukham Sōmu | Pustam Pattamu |
| Uram Rommu | Punnāga Ponna |
| Rutam Roda | Pūga Poka |
| Mukula Mogga | Tulasi Tojasi |
| Mundam Mondemu | Tunda Tondamu |
| Mushkara Mokkalidu | Khura Gōru |

(14) A letter is doubled and its preceding long vowel is shortened.

| | |
|------------------|------------------|
| Sakshi Sakki | Prekhana Pekkana |
| Rākshasa Rakkasa | Kāñchi Kanchelu |
| Arya Ajja | Kārya Kajja |

The rule is true in Telugu also. Thus we have.

| | |
|---------------------|------------------------|
| Tyāga Taggu | Bhibhatchi Vivvaccu |
| Pātaka Pattiyamu | <i>Chālini Jalleda</i> |
| <i>Bhāra Borra</i> | <i>Kākū Kakku</i> |
| <i>Kūta Gutta</i> | <i>Jāla Jalla</i> |
| <i>Rāja Rachcha</i> | <i>Dhūma Dummu</i> |
| Lāghava Laggala | |

(15) The vowel ri if on an initial consonant becomes i. If the initial letter is a pure vowel without combining with a consonant it becomes consonantal ri.

| | |
|-------------------|-------------------------|
| Trina Tina | Rina Rina |
| Dridha Dida | Riddhi Riddi |
| Ihringa Binga | Rishabha Risaba |
| Sringa Singa | <i>Sringara Singara</i> |
| Krishna Kishna | Ritu Ritu |
| Mriga Miga | Bhringara Bingara |
| <i>Rishi Risi</i> | |

The rule is true in Telugu also and the two words italicised above are found in Telugu.

The following are good examples in Telugu which illustrate the above rule.

Mriti Mitti Dridha Ditavu
' Griha Gimu

The following forms where the vowel *ri* of Sanskrit becomes *e* interesting.

Mridu Mettani Hrit Eda
Mriga Mekamu Grihasta Gēstu

The following are anomalous forms in Telugu.

Vridhdi Uddi Rishi Rusi

Grujana Gurija Gridhra Gadda
Prithvi Pudami

We shall in a subsequent issue discuss the other aspect of this problem. As it is, two things became clear. These are

(1) That though the general cast of the Telugu and Kanarese mouths is the same, the Sanskrit words that underwent change in one language are not the same as those in the other.

(2) For the same word different languages give different forms.

SCLATER'S THEORY OF THE ORIGIN OF THE DRAVIDIAN TRIBES.

The extent to which an earnest zeal to figure as originators of new theories leads men to, is very well illustrated in the heading for this article. Dr. Sclater and Mr. W. L. Sclater are eminent biologists, and in their *Geography of Mammals* adduced evidences to show that at one time, a continent by name "Lemuria" must have existed in the Indian Ocean. After adducing evidences regarding the fauna of lands yet existing in this part of the globe—especially the Lemurs, they concluded that, "This fact would seem to show that the ancient 'Lemuria' as the hypothetical continent which was originally the home of the Lemurs has been termed, must have extended across the Indian Ocean, and the Indian Peninsula to the further side of the Bay of Bengal and over the great islands of the Indian Archipelago."

This scientific deduction, so interesting, was never intended by these celebrated scholars to make the Australians and the Malaysians the Kin brothers of the South Indian Races: But curiously enough the later day ethnologists took advantage of the statement quoted above

and invented a Sclater's or the Lemurian theory for showing that the South Indian Races have migrated from those parts. In his "People of India," Sir Herbert Risley refers to this Australian origin of the South Indian Races and says "Linguistic affinities, especially the resemblance between the numerals in Mundari and in certain Australian dialects, and the survival of certain abortive forms of the boomerang in Southern India, have been cited in support of this view, and an appeal has also been made to Sclater's hypothesis of a submerged continent of Lemuria, extending from Madagascar to the Malay Archipelago, and linking India with Africa on the one side and Australia on the other." We thus see how a Sclater's hypothesis intended for one thing was gradually made to connote a something for which it is not responsible. We quote a modern scholar on this subject who explains it thus:—

"The Lemurian or Sclater's theory.—According to this theory, the original home of the Dravidians was the now submerged continent of Lemuria, which was somewhere in the Indian

ocean, before the formation of the Himalaya Mountains. This continent is supposed to have extended from Madagascar in the West to the Malay Archipelago in the East, connecting Southern India with Africa on the one side and Australia on the other. If so, the Dravidians must have entered India from the South, long before the submergence of this continent. In support of this theory the following arguments have been adduced:—

“*Ethnology*:—The system of Totems prevailing among the half-civilised castes and tribes of India, and the use of Boomerang by the Kallans of South India are found nowhere except among certain Australian Tribes; Dr. R. Wallace’s description of tree-climbing by Dyaks of Borneo applies equally well to the Kadars of the Anamalai Hills; and the chipping of all or some of the incisor teeth by the Kadars and Mala-Vedans may be found among the Jakuns of the Malay Peninsula.

“*Philology*:—Linguistic affinities, especially, some doubtful resemblance between the numerals in Mundari and in certain Australian dialects have been noticed by Bishop Caldwell and Sir H. Risley; but it may be pointed out that the Munda Language is quite independent of the Dravidian Tongue and it may be doubted whether the poor similarity in respect of the numerals alone will be enough to establish the theory under discussion.

“*Geography*:—The argument under this head has already been stated and more will be said about it furtheron. However, it may not be out of place to mention here in support of it a tradition which had currency among the early Tamils and has been preserved in their literature. That is,—

பஹிலி யாற் றுடன் பன்மலை யடுக்கத்துக்
குமரிக்கோடுங் கொடுங்கடல் கொள்ள.—*Sil*

(The cruel sea swallowed up the Pahruli river and the Kumari peak with the chain of mountains.)

And the commentary of Adiarkunallal on the above lines runs thus

அக்காலத்தி அவர் நாட்டுக் தென்பாலி. முகத்
திற்கு வடவெல்லையாகிய பஹிலி யென்னு மாற்றி
ற்கு மிடையே எழுதாற் றுக்காவதவாறும் இவற்றின்
நீர் மலிகாணென மலிந்த ஏழ் தெங்கு நாடும் ஏழ் மது
ரை நாடும் ஏழ் முன்பாலை நாடும் ஏழ் பின்பாலை
நாடும் ஏழ் குன்ற நாடும் ஏழ் குணகாரை நாடும் ஏழ்
குறும்பனை நாடும் என்னும் இந்த நாற்பத்தொன்பது
நாடும் குமரிக்கொல்லம் முதலிய பன்மலை நாடும் காடும்
நதிகும் பதியும் தடநீர்க்குமரி வடபெருங்கோட்டின்
காறும் கடல் கொண்டொழிதலாற் குமரிபாகிய
பெளவமென்றோரென்க.—*Sil 198*

“The Lemurian theory can cover, if at all, a very small part of the problem and apply only to the primitive aboriginal sections of the people.” *

The real points about it can however be analysed and their import laid bare before the public. The points at issue are

- (1) Was there a Lemurian continent once in the Indian Ocean.
- (2) At what Geological epoch did it exist?
- (3) What are the points of similarity that lead to this hypothesis regarding the South Indian people?

(1) Call it Lemuria or whatever you will, that a continent like that once existed is an incontrovertible fact. We have sufficient Geological grounds to prove that much of what is now sea was in these portions once land surface, although Australia might not have been reached.

If we find two adjacent islands inhabited by the same land animals, and the sea separating them is not very deep, Geology favours the idea not of the spontaneous generation of these species independently in each place, but that of

* See Tamil studies by M. R. Ry. M. Srinivasa Aiyangar, M. A.

migration when there was a land route. If as further evidence we know of volcanic eruptions, or fossil remains in such places, the evidence becomes all the stronger and Geology could solve many a problem of this sort by scientific proofs universally accepted.

Let us take some of the islands of the Archipelago in their order. The islands, Java, Sumatra, Borneo, Phillippines and Bali are very near each other. "The elephant and tapir of Sumatra and Borneo, the rhinoceros of Sumatra and the allied species of Java, the wild cattle of Borneo, and the kind long supposed to be peculiar to Java are now all known to inhabit some part or other of Southern Asia. None of these animals can travel long distances by sea to settle in these islands, and the fact that they exist must indicate a land route now submerged." It is thus clear that these three islands were at some remote geological age a part of the main land of Asia. The fauna of Phillippines do not in some respects agree with those of Asia and this seems "to indicate that they were separated at an earlier period" from Asia. When we leave Celebes and Bali, we enter on a new world altogether. Dr. Wallace observes, "It is well-known that the natural productions of Australia differ from those of Asia, more than those of any of the four ancient quarters of the world differ from each other, Australia in fact stands alone; it possesses no apes or monkeys; no cats or tigers, wolves, bears, or hyaenas no deer or antelopes, sheep or oxen, no elephant horse squirrel or rabbit; none in short of those familiar types of quadruped which are met with in every other part of the world. Instead of these it has marsupials only, Kangaroos and opossums, wombats and the duck billed platypus. In birds it is almost as peculiar."

It is thus clear that Australia was separated, from Asia, long before the ordinary quadrupeds have come into existence on earth. Thus we see that there was a time when a part of the Eastern Archipelago formed a part of Asia.

The boundary line is somewhere near the Island of Bali, and beyond this limit, we pass into a world whose fauna are peculiar to itself with nothing in common with the usual fauna of the Eastern islands. Those evidences also lead us to the belief that the Phillippines were separated from Asia earlier than the Spice Islands. We are not at present concerned with our African relations, and what we have stated is enough to establish a land connection between the Malayan Peninsula and the Archipelago.

(2) If such was Lemuria, what were the sort of people that inhabited that continent in those early ages? It is impossible, after the evidences we have adduced, to claim that the early settlers of Southern India came from Australia. The geological aspect of this question is further discussed in a separated paper printed in this issue on the "Antiquity of Man." It has to be understood, that a theory that is based on Geology must accept the dictum of that science on the question, and if Lemuria sank before Himalayas rose, Geology gives no evidence as to the existence of man on this earth, when that continent was submerged. The allegations made by the latter day Orientalists on this subject are as false, as the statement that Dr. Schlater propounded a theory that the Dravidians migrated into India from Australia. Yet such is the way in which some of the so-called scholars deal with questions of Indian Anthropology and we need no more try to disprove this absurd kinship.

If we are not thus connected with Australia are we not at least of Malayan origin? The Archipelago was once connected with the mainland. Is it not proof conclusive that we of Southern India therefore came from the Malayan continent, which has since submerged? Some superficial grounds may however be found on which to rest such a theory. It has been alleged that the boomerang found in Australia and in Malay seemed to agree with that still used by some of the South Indian tribes, that certain words used by both the tribes have

common roots, that they have both black skins, black eyes, black curly hair, thick lips, low nose with wide nostrils. And Sir William Turner says that for such reasons "many ethnologists of great eminence have regarded the aborigines of Australia as closely associated with the Dravidians of India." If we say that Lemuria was never connected with Australia after the advent of man, there are scholars armed with the theory that in such a case people from Malaya must have branched off into Australia and Southern India, in the early ages of human history. Why on earth, they should be so particular as to link us with the Archipelago is not very clear.

But in spite of the zeal with which their argument is attempted to be supported, the facts are unfortunately all against them. As for the boomerang which gave them an argument, Mr. E. C. Stirling says that the South Indian Boomerangs "lack the bladelike flatness and the spiral twist, which are always characters of the true Australian returning boomerang" Mr. Savile Kent observes that "from the multiplicity of evidence recorded, (ancient Egyptians Africa, Arizona, New Mexico, and Etruscan vases) the boomerang must evidently be regarded as a weapon that did not originate adventitiously with the Australian aborigines, or at any rate upon Australian soil, but was in all probability brought there with the earliest emigrants from the Asiatic continent." In fact, a weapon so universal cannot be called the peculiar production of Malaya or Australia, without proof. With regard to the statement that certain words used in these languages are derived from a common root, Sir, W. Grierson analyses the question and proves that

1. With regard to the numerals every trace of analogy with Munda and Australian languages ceases when we go beyond two.

2. the same is the case with regard to pronouns. .

After reviewing certain supposed similarities Sir William Grierson observes "An examination of the points in which the Vocabularies of the Munda and the Australian languages have been supposed to agree therefore shows that such analogy as seems to exist is too questionable to be made the basis of any conclusion"

With regard to the black colour and other physical characteristics, it has been found on actual observation that such similarity is not correct. Sir William Turner after a thorough and critical examination gave it as his verdict that "In both cases the general form and proportions are dolichocephalic, but in the Australians the crania are absolutely longer than of the Dravidians, owing in part to the prominence of the glabella. In the Australians it is not unusual for the adult male to have the glabello-occipital diameter approaching or even a little more than 200 mm, whilst in the male Dravidians measured in tables I-IV only two specimens reached 191 mm. The Australians skull is heavier, and the outer table is coarser and rougher than in the Dravidians; the forehead also is much more receding; the sagittal region is frequently ridged and the slope outward to the parietal eminence is steeper. The Australians in the *Norma facialis* have the glabella and supra-orbital ridges much more projecting; the nasion more depressed: the Jaws heavier; the upper jaw usually prognathous. sometimes remarkably so.....the comparative study of the two series of crania has not led me to the conclusion that they can be adduced in support of the theory of the unity of the two people."

On this authoritative pronouncement Sir Herbert Risley observes "This is the last word of scientific authority."

As for the question of colour, that eminent authority Mr. V. De Quatrefages says, "The Negro transported into the same countries has also undergone remarkable changes. His colour has paled, his features have improved

and his physiognomy is altered. "In the space of 150 years" says *M. Elisee Reclus*, "they have passed a good fourth of the distance which separates them from the whites, as far as external appearance goes."

The great Ethnologist Lyell also holds the same opinion. It is said of him that "when visiting two Negro churches, at Savannah, he remarked that the odour so characteristic of the race was scarcely appreciable."

"A long medical experience at New Orleans has shown *Dr. Visint* that the blood of the Negro creole has lost the excess of plasticity which it possessed in Africa. With *M. M. Reclus*, *de Lislea*, etc., let us add that while the physical type has undergone modification, the intelligence had improved and we shall have to recognise that in the United States a *Sub-Negro* race has been formed derived from the imported race.

As already stated the last word has been pronounced as to our being of Australian origin. The theory is wrong (1) from Geological evidences. Beyond Bali there is a chasm which in pre historic times neither man nor beast could cross. (2) The so called affinities are false and scholars have already expressed themselves about it, (3) Any slight traces of similarity in languages or customs can be

accounted for by the Indian occupation particularly of Saivaites and Andhra Buddhists from the time of Nagarjuna. Our Australian origin being thus a myth, who then are we? We shall in the next issue try to discuss another origin which some oriental scholars have given to us.

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THE ANTIQUITY OF MAN.

The question of spontaneous generation has been already discussed by us in a previous paper. If man is not born without parents and evolution has to supply a parent for the human race, it becomes clear that we cannot in the earliest primitive or secondary ages hope to find traces of man. At any rate as the highest perfection of nature now, man belongs to a later day in the earth's life and we have evidences

by which to trace him back to an age sufficiently ancient for purposes of human history.

Says Haeckel in his evolution of man, "Each of us has, in the forty weeks—properly speaking in the first four weeks—of our development in the womb, passed through the same series of transformations that our animal ancestors underwent in the course of millions of years." It is said that the human embryo

first looks like a cluster of cells, then like a lancetol, then assumes the shape of a fish and thus grows from stage to stage until the next amphibious form and the later mammalian stage have been reached.

The lower orders of cells reproduce themselves in less than a few seconds. As we ascend in the ladder of evolution, the time taken for reproduction varies with the size of the animal form reached. The period of pregnancy of a dwarf mouse is three weeks; of a hare four weeks; of a rat five; A chick is hatched in 21 days, a duck in 25 days; a peacock in 31; a swan in forty-two. The horse takes forty three weeks to develop; the camel fifty-two and the elephant ninety. Man takes forty weeks.

Evolution has proved to us that man did not exist in the early Primary and Secondary periods of Geology and he is known to evolve only after the apes have come into being in the Tertiary. But apart from the question of evolution, we can directly trace man backwards from the evidences left to us of his handiwork and the material for it is now abundant. Let us begin the story of man from the historical beginnings of Nations. The Hindus trace their history from the last glacial period more than ten thousand years ago. But Hindu opinions and records are not supposed to suit western minds and there is no use of urging on Hindu evidences. The Chinese trace their history to about 3,000 B. C. and China must have been peopled much earlier if it became a historical nation in 3,000 B. C. A great flood seems to have inundated China during that time and Christian writers connected it with the Biblical flood in Noah's time in 2,349 B.C. As a matter of fact Geology knows only the glacial period and its floods during recession more than ten thousand years ago; but we are not permitted to give 10,000 to B.C. to China as the Biblical floods are given a later date. The history of Assyria begins in 1,650 B.C., or more than 3,500 years from to day, and this

shows that man lived on earth at least 3,500 years ago. The utmost stretch that can be given to the history of Media is about 2,000 B.C. or about 4,000 years from to-day. Babylon has only begun its history at about 1,200 B.C. and the facts that we can gather from Babylonia cannot shed much light on more ancient kingdoms like those of Egypt or India. The knowledge of Europe in matters Oriental rests on the Biblical, Phoenician and Babylonian evidences; and these cannot be sufficient records to establish the antiquity of India or China. The history of Chaldea can be stretched to reach 2,453 B.C. or 4,376 years from to day (1918) and man certainly existed long before that period, if Chaldea became a historical nation at that early time. The first King of Egypt of the Ka dynasty ascended the throne in 4,977 B.C. or nearly 7,000 years ago. The Biblical records give about 5,000 B.C. as the date when Adam was created. The Cuneiform scripts on the tablets found in the excavations at Nippur in Babylonia show that the temple of Bel there was erected in 7,000 or 6,000 B.C. Historical records of ancient nations cannot take us farther back and even if we accept the Chinese or Indian traditions they cannot take us to more than another 10,000 B.C.

The next kind of evidence regarding the antiquity of man is from languages. The celebrated philologist Dr. Sweet says "We may, perhaps venture on the conjecture that the Aryan language still constituted an undivided whole about 10,000 B.C.—undivided in the sense that all Aryan speakers were still able to understand each other with perfect ease". If the Aryan dialects can on conjecture be traced back to 10,000 B.C. the primitive germs for the formation of a spoken dialect can be easily pushed back to another four or five thousand years and the antiquity of man on such conjectures goes to a period of some 17,000 years from to-day. Our next stage is rather more difficult to work out.

If man flourished 17,000 years ago, he must then be in a very uncivilised condition. We advance from age to age in civilisation according as science advances. Weaving is a human art, and early man cannot provide himself with clothes. Even 7,000 years ago, Adam was supposed to have lived naked. Mining is a later industry and primitive man cannot be expected to have metals, much less implements made of metals. To pierce an animal, or cut it open, he must, if he be more civilised than the beast that uses its claws and teeth, use only pointed stone for this purpose. To beat an animal to death, he must only use the branch of a tree. Nature provides to us in abundance stones, bones and twigs of plants which must form the natural implements for primitive man. A long use of implements made of these stones bones and twigs suggests to intelligent beings that they can be so carved as to serve useful purposes. The first stone implements will necessarily be very rough, but long usage improves the art of making them and nicely polished articles become the order of a later day. They are useful for manifold purposes.

It is thus known that the iron age is our own. Iron is a metal that can be cast into better and more useful purposes than bronze. The iron age was preceded by the bronze age.

The stone age, of polished implements or the new stone age (the Neolithic) preceded the bronze age, and the age of rough cut stone represents the earliest stage of stone implements or the Palaeolithic age. The iron and bronze ages have passed away by the time we reached an age of 17,000 ago.

Our next step in tracing the antiquity of man must be by means of polished implements of the Stone age. Here is an interesting episode. Monsieur Boucher-de Perthes was a retired French Physician of some repute. He lived at Abbeville in the valley of the sluggish Somme. He kept a museum at his house for which he collected many interesting exhibits including the remains of many animals. The river Somme flows

through peat mosses and deposits in its sluggish course many curiosities carried away by its current. On either side of the river higher up in its course are ranges of low hills which have been quarried by man for building purposes. In the pits so formed by quarry digging some of the treasures carried away by the floods of the Somme were deposited. These treasures were obtained by erosion of the land surface and consisted of the remains of the rhinoceros, mammoth, and other extinct animals. There were also some pieces of carved flint stone which the workmen called 'tongues du chat' or cat's tongue. Boucher purchased these things for his museum. It so happened that in 1841 he himself discovered in a bed of sand a cutting stone instrument which bore unmistakable signs of human carving. Boucher thus added to his collections from day to day many of the valuable treasures of ancient man and published in 1847 a book on his discoveries. But such is the nature of the present day world that genuine worth is not alone the qualification for recognition and Boucher's theories as to the nature of these prehistoric relics, of man were condemned as absurd fictions. But India is the country to impart ancient wisdom, and Dr. Falconer who worked in India in the Siwalik region and unearthed many fossil remains in our country (such as the now extinct Indian giant tortoise, which suggested the Kurmavata to the ancient Indian, as the gigantic whale which suggested the Matchya Avatara), chanced one day to stay at Abbeville on his way from India to England. Palaeontologist that he was, Falconer took an interest in Boucher's Collections, and the collected flint implements in the Museum told their story to the worker in India. The wonderful fossil discoveries of Falconer in India gave him a high place among the palaeontologists of the world, and when he reached England his fame was able to do what facts could not alone achieve: Sir John Evans, and Mr. Prestworth two high authorities on Geology at once proceeded on a Pilgrimage

to this holy shrine of ancient human impliments at Abbeville. Boucher was glad to receive them. The result was miraculous. Prestworth became a convert to the new views. On the 19th of

May 1859 he read before the Royal Society a paper on these flint implements and established beyond question the fact of the human flint craft of prehistoric man.

THE FOLKLORE OF SOUTHERN INDIA.

(BY M. R. FY. R. KULASEKHARAM. B. A., L. T.)

THE WISE TEACHERS.

In the good old days, there was a Tamil King. He was a wise and good ruler. His solicitude for the welfare of his subjects was well known. He was ever on the alert to introduce changes into the administration to suit altered conditions. Once he had a discussion with his Prime Minister regarding the introduction of certain reforms.

"We shall consult the teachers," said he, "for they are by far the wisest among people."

"Pray forgive me for venturing to offer a different opinion," submitted the Prime Minister with great humility, "the profession of teaching is a narrowing one and the teachers are dogmatic folk not open to reason." "You appear to speak wisely," replied the King, "Still I think you are not right. Those who have taught us all and moulded our young minds must certainly be wise."

"May you live long, O King! It is easy to prove what I have said. Pray order all the teachers in the kingdom to meet your Majesty on an appointed day, in order that they may give us their presence at a certain function."

"Aye, do so," said the King, "Please invite them all in my name."

Invitations were accordingly issued to all the teachers in the realm. The loyal pedago-

gues came to the Court on the appointed day at the specified time.

As the king saw them at the gate, he bowed to them and moved his head to the right as a sign that they should take their seats to the right of him.

Now the cleverest among the teachers, thinking that the king indicated the Tamil letter *dana* (L-dana) rose and uttered it. The other teachers also began saying *dana* like small children who keep on uttering the sounds as they trace their symbols on sand.

The minister made a sign to the teachers to desist and asked the King whether he was not right in what he had said. The answer was in the affirmative.

From that day, a teacher is popularly known as *dana* in the Tamil country.

THE FOOLISH WRITER.

There was a copyist attached to the court of a Tamil King. He was famous for the greatest exactitude in copying important documents. Once he was engaged in transcribing a document. There was a dead fly sticking to the paper in the middle of a word. He was sorely puzzled for a while as to how he should the copied word the exact semblance of the

original. A thought flashed in his ingenious mind and he killed a fly that buzzed near his face and stuck it at the proper place in the word. When the copy was compared there was quite an uproar of mirth among the clerks and he who was the cause of all the jollity was ever afterwards known as the scribe who struck a fly dead.

* Ye adchan writer is a common phrase in Tamil which means "The Scribe who struck a fly dead."

A Hindustani proverb says of a copyist,—*nakhāl likhne vale ku akkal nai*—The Copyist has no sense.

VYAKARANA MAHA BHASHYA—ANHIKA SECTION I.

BY M.R.RY. K. RAMA PISHAROTI M.A., (HONS.)

I bow to the immortal triad of Grammarians Panini, and Kāthyaiana and Patanjali.

Bhāṣya. Now the exposition of sounds.

The first question that has been raised in this connection is whether this statement is made by Patanjali or by Kātyāyana. This doubt is based on the fact that our author proceeds in the next passage to explain this. Some are inclined to think that the passage belongs to the author of the 'Vārtikās,' and for this view they have the support of Sāyanāchārya. But in the first place, commenting on its own statements is one of the characteristics of a Bhāṣya. Secondly Vārtikakāra makes his 'Mangala'—Benediction—later on and since the benedictory passage generally opens the work that alone must be the true beginning of his work. In this passage also is assigned to him, he would be making two benedictions, which, considering the great importance that grammarians attach to brevity is, to say the least, inconsistent. So far as Sāyanā's statement is concerned, it might be taken as an interpolation. Hence the modern school of Grammarians

maintains that this statement belongs to Patanjali.

In the translation we have retained the original word, 'Śabda.' It means not merely the 'word' but the word which has the linguistic correctness which is given by a recognised system of grammar. Patanjali uses the word 'Śabda' to denote the words of the Sanskrit Language, and in some cases as we shall see later, it might be taken to mean, even the language itself. Such being Śabda, it can be easily understood what 'Apaśabda' means. In the following pages we retain these two Sanskrit words in preference to their English equivalents.

We have translated the word अथ by the term—'Now.' The word 'Atha' has many meanings. It may serve as the benediction—the homage and worship to the Almighty for the successful completion of the work undertaken; it may be taken as denoting the beginning, or a change of subject. In what sense is it used here? Our author himself explains its meaning thus:

Bhāṣya. The Śabda namely, अथ is used to denote commencement.

(*) S स्वार्थोवर्णयेत् वाक्यैः सूत्रानु सारिभिः

स्वपदानिच वर्णयन्ते भाष्यं भाष्य विदो विदुः ॥

(1) S मात्राङ्गमः पुत्रलाभः ॥

The word अधिकारार्थः can be understood in two ways, according as we interpret the word अर्थः. It may be taken to mean the वाच्यार्थः

the denotative meaning ; and then the compound is split up thus : अधिकारः अर्धः यस्य whose denotative meaning is 'beginning,' Against this interpretation is brought forward Bhāṣyākara's own dictum that 'Nipatas' have no denotative power but only suggestive power (1). Hence we have to proceed to the second meaning ; अर्थ is taken to mean 'the object'. In that case the expression comes to this. अधिकाराय । and means 'in the sense of beginning.'

In the explanatory Bhāṣya there are the words इति and अयम् । The object of using these two words is this : "the particular word अथ as found used in the sentence अथशब्दात्तु शासनम् and not any अथ means" etc. This definition is necessary since अथ in other places has other meanings. Now then this word means 'begin' and the question naturally comes—begin what ? In answer writes our author.

Bhāṣya.—It is to be known that the treatise namely Śabdānu Śāsana is begun.

The word Śastra means any methodical treatise or science. Anuśāsana is that which enables us to distinguish ; and here it means what distinguishes 'Śabdas' from 'Apaśabdas' or briefly grammar. By thus using a word pregnant with sense to denote grammar, our author has briefly given us the object of grammar and this particular idea is conveyed by the usage of the word नाम namely. This sentence also suggests that our author is not going to take into consideration, the Sanskritic dialects. In other words than Patanjali here considers only the Vedic and the Classical languages.

The word Śabda may mean any sound or it may be taken to mean the linguistic sounds. Thus then Śabda may denote the sound produced by man, beast or bird or the words of Vedic, the Sanskrit, and the Prakrit languages. Now then what does our

author mean when he uses the word, 'Śabda' ? He now proceeds to determine this meaning and he introduces the topic with a question.

Bhāṣya.—Of what śabdas ?

Some find fault with this question : he has not used the word 'Śabda' to raise the question of what 'Śabda' the objection is silly. There is the word 'Śabda' in 'Śabdānuśāsana', though the word occurs in a compound.

Bhāṣya.—Of the worldly and the Vedic.

The worldly śabda i.e., the worldly language means the language commonly used by the people in communicating their thoughts to one another and this is none other than the Sanskrit Language. The statement, therefore, means 'of the Sanskrit and the Vedic.' In what follows we shall be using the term 'Sanskrit' instead of 'worldly'.

This gives rise to a question. The Vedic language is as much a language of the world as Sanskrit itself. Such being the case, it is wrong to say 'of the worldly and the Vedic.' In answer we may say that the Vedic language though 'worldly' is yet given a separate and independent existence, simply to emphasise its importance. Such a procedure is also seen in 'All have come, Rama too.' We may point out another reason also. True enough, the Vedic language can be said to be a language of the world : but it is no longer used as such while Sanskrit is the language of the people. The two have been separately designated to emphasize that the Vedic language is dead except in its bearing on the rituals, while Sanskrit is living"—so might Patanjali argue.

This name, 'worldly', by which Bhāṣya-Kara designates Sanskrit is highly significant and forms, as we are inclined to think, a sufficient refutation of those critics who maintain that Sanskrit was a dead language even at the time of Panini ! Now our author proceeds to illustrate these.

Bhāṣya. Of these in order the Sanskrit ; Gauh, aśva, hasti, śakuni, mṛga, brahmana ; and the Vedic are : sanno devirabhistaye, iṣe tvorje tvā, agniniṣe purohitum, Agna āyahi vītaya, etc.

We have not translated these simply because here the words are more important. There is a difference in the examples given for both. To illustrate the former he gives only words and the latter he gives sentences. This is because the words of the Sanskrit language have no fixed order. While in the case of the Vedic the order is inviolable and further the words are accented.

In the instances given to illustrate the Vedic Sabda, we find all the four Vedas represented. Thus the first quotation is from the Atharvana Veda, the second from the Yajur Veda, then from the 'Sāma' Veda, and then from the Rig Veda. In a sacrifice there are four principal persons, the Hotri, the Adhvaryu, the Udgatri and the Atharvan. The last is the general superintendent whose duty is to correct and rectify any mistakes that might crop up in the performance of the 'Yaga'. In other words on him devolves the general conduct of the sacrifice. About this is said in the Atharvana Veda and hence it is given the first place.

Some are inclined to take this prominence given to Atharvana Veda in a different light and attach it with something biographical. Because he has assigned the first place, the place of honour, to the Atharvana Veda, Patanjali must have been a follower of the Atharvana Veda. Naturally it is the tendency of one and all to exalt what one worships and in this connection exaltation can be done in no way other than by making it prominent i.e. by giving it the first place. Later he takes another Vedic passage for illustration and that also is from the same Veda. Hence they class him as a follower of this Veda.

Thus then, in this treatise, the author tells us he is going to treat about both the Vedic

and the Classical language. Hence its difference from the Pratyakhyas and the grammar of Śākatāyana ; and herein it is implicit that he is going to follow Panini, since he alone has traced both the languages and not Śākatāyana who traced only of the classical language. Though the Vedic language is more important as being the language of the 'sacred books', yet it is put second for the purpose of showing that the Sanskrit language also claims an equal share of attention

Now our author has said that he is going to treat about sabdas and in what follows he gives us the definition of sabda. As usual he introduces the subject with a question.

Bhāṣya.—well here in 'Gauh', which is Sabda? When we hear the sound 'Gauh', we become possessed of so many ideas, we have here the knowledge of the sound, then of the particular sound 'Gauh', then of the concept denoted by that, its general description, its general actions etc. of these manifold ideas which is that which is termed 'Gauh'. This inquiry which he has herein set up takes us to the definition of language. Now our author proceeds to answer this question.

Bhāṣya. Is that sabda, that namely, the concept having the dewlap, the tail, the hump, the hoofs, and the horns?

No, it is said, for that is dravya—Substance.

Surely the concept cannot be the sound because the two are quite distinct and different and further the two are realised by different sense organs.

Bhāṣya.—or is that 'Sabda', that, namely, its actions, its movements, its winking of the eyes? no, it is said ; that is action.

The same principle that distinguishes Sabda from substance distinguishes it from every other thing. So this and the following other alternatives are really unnecessary but are considered here for the sake of thoroughness.

Here the alternative suggested can be paraphrased: Are we to understand by sabda its actions; such as its walking, its closing the eyes, its eating, its drinking etc. इन्द्रिय- actions, refers to those actions of the body which are consciously made and which are intended to convey certain desires; चेत्य — movements refers to those actions of the body which are made unconsciously. These words then embrace within them all actions conscious or unconscious, significant or non-significant. And since these are only 'actions' they cannot be 'Sabda'.

Bhaṣya.—Or is that sabda, that namely, white, blue, brown, gray? No it is said, for that is quality.

Or is that 'sabda' that namely what is common to the different (things), and what is not destroyed, when destroyed. No it is said; (for) that is Akṛti.

The latter statement require, explanation we shall expand it thus: 'Are we to understand by Sabda that common quality which all cows possess and which is not destroyed even when the individuals constituting the genus are destroyed? This cannot be sabda because that is the common quality. Nagesa suggests that by common quality we are to understand all that which manifests this common quality, we have retained the word 'Akṛti' This may literally be rendered by the term 'feature' or shape and this means the general resemblance in the 'make' or the 'get up' Technically it may be explained as that broad resemblance of shape which is common to a genus and which is possessed by each and every one of the individuals constituting that genus or the 'General' as Max Muller terms it.

We shall here pause for a moment and explain some of the terms that have been used in this connection. We all know what is meant by action and we need not here explain it 'Guna'—Quality more correctly means an attribute. The surest method of finding out whether a certain Guna is Guna or not is to

examine whether it has Ayutasidhatvam, i. e., whether it can exist apart from the thing possessing it. In other words, if the attribute and its receptacle are capable of separate and independent existence then the former is no Guna; but if they are not capable of such existence, then attribute is a Guna. Thus for instance take whiteness. We cannot conceive of whiteness by itself i. e., apart from something which is white such as a cloth or a wall. Dravya, we have translated by the word substance and this is based on Max Muller's (cf. Page 290-line 1. Thomson's 'Outline of the Laws of Thought') By this word we are not to understand the mere materials. The term Dravya is a categorical name and this embraces within it 'the fine elements of earth, water, light, air and ether, time and space, soul and self.' Now to sum up, Sabda is neither, 'substance,' nor 'action' nor 'Genus' nor Quality. Hence our author reiterates the question.—

Bhaṣya—what, then, is sabda?

Before we proceed further we shall make a few observations. In the first place, does not this question itself seem to be out of place? One would think that the question is very silly and that even a child could answer it. But as we have seen, it is not so. The aim of the author is to give us a true definition of language. Now to explain the question, to take the instance, the term 'Gauh' serves three different functions: (i) it denotes the idea or the knowledge of 'Gauh' (ii) it denotes the word i. e. the audible sound 'Gauh'. (iii) it denotes the concept expressed by the term 'Gauh'. In other words then the term denotes the knowledge, the word and the concept. Hence the question becomes quite relevant and not only that, it is quite indispensable before proceeding with the subject in hand.

We must admit there is some connection between Sabda and the meaning it conveys; but for this connection, the meaning will not

rise in our minds at the hearing of the sabda. This connection, says the Logician is due to the divine will. 'God' wills that a particular word is to convey a particular idea'. This has been traditionally handed down from father to son. This 'will' is itself the connection between the word and the concept. The grammarians, however, do not accept this. They base their argument on the fact that this connection does not put us in remembrance of the divine will—a something which is always necessary in such cases. Hence they maintain that this connection is nothing other than what exists between the 'denoter' and the denoted, or what is technically called 'yogyatā or tadātmya'. This 'tadātmya' is only apparent and non-existent, the two being really distinct and different. In other words then, the grammarians refuse to accept any natural and necessary relation or connection between the word and its concept and more or less maintain the artificial arbitrary connection. At the same time, curious though it may be, they also maintain that this relation is eternal; but by this 'eternality' we are to understand only that it is beginningless, *i.e.*, of unknown beginning. In other words, as far as our knowledge can penetrate, we cannot conceive of a time when man was without language.

Having made this brief digression we will proceed with the answer that Bhāṣya Kara gives.

Bhāṣya.—That is sabda, by the utterance of which (is raised in our minds), the clear notion of the concept with the dewlap, the tail, the hump, the hoofs, and the horns.

The science of Philology has not, in its present stage of development, been able to give a better definition of language. This definition of Bhāṣyakāra is based upon that most abstruse of grammatical problems, we mean the theory of 'sphōṭā'. The existence of 'Sphōṭā' or the sonant substratum first formulated perhaps by the Grammarian sage Sphōṭāyana established by Patanjali and later elaborated

by Hari—is accepted by all grammarians, and in their wake have followed the Rhetoricians. Some of the philosophical systems however, have entertained other views about language. Thus the Mīmāṃsākās do not accept this 'Sphōṭā' theory though they accept the 'Nityatva'—eternality of language. The Nāyāyikas do not accept this and maintain that Sabda is not eternal.

Now we shall show the necessity for accepting the Sphōṭa theory. Suppose we do not accept this. How is the meaning conveyed? Is it conveyed by the mere letters or is it by these letters as combined into a word? We shall take a word at random and examine it, for instance कलकल. The letters by themselves cannot convey the idea expressed by the word. In other words the letter क by itself cannot give us any meaning nor does any other letter by itself. If it does give a meaning then the other letters become useless. Well then, let the combination give the meaning. This again is impossible since the letters not being 'eternal' vanish away the very next moment they are uttered. In plainer language the letter क as soon as it is uttered dies away and it no longer exists when ल comes. The same is the fate of ल and the other succeeding letters. Thus then, since the preceding are non-existent when the following comes, the letters which, as combined alone, constitute the significant word, cannot get themselves combined; and since the combination is impossible, letters, as combined into a word cannot give a meaning. The critic might now shift his ground and say thus. Though the letter might die, yet there is the Samskāra *i.e.*, the impression left by the letter. The various impressions of the various letters which constitute the word, can combine together, and this combination gives the meaning. This view also is not quite acceptable because the क, to take any letter, gives the impression of क alone and not necessarily of that क which in combination with other letters gives the idea required, *i.e.*, not of that क which

is to combine with the next sound. Hence then this view cannot help us to solve the question,—the more so when we also remember that the recollection of the letters need not follow in the same order in which the various letters occur in the word.

The acceptance of the theory of Sphota does away with the difficulty. But before we apply this we shall first summarise the theory itself. To begin with, *śabda* is divided into four varieties—by *śabda* is meant the *śabda* we can produce. Every *śabda* we utter has four stages to pass through before it becomes audible. The desire arising to convey our thoughts, the *śabda* which is capable of conveying that idea, sets out from under the 'nābhi'—navel. In its first stage it is known as 'Parā', this can be realised *i.e.* heard by the Yogins only. This is sometimes identified with the 'Primeval Cause'. By this statement we are to understand that the Yogins in their search after God have attained to the realisation of this nubinal sound and that they have not advanced beyond that. When any one man becomes capable of realising this, he becomes lifted up over and above the pleasures and the cares of this world *i.e.* he becomes identified with the 'Ego' *i.e.* the part and parcel of the Supreme Creator of this Universe. Now this sound 'Parā', starting from under the 'nābhi' is termed 'Pāśyanti'. This too, like the former is perceptible only to the Yogins. Again going up it reaches the heart, at which stage it is called by the name Madhyama. This is perceptible to all and is identified with the booming, or the hum that we hear (or seem to hear) when we make our ears 'sound tight'—*i.e.*, when we exclude all other noise. This is held to be so very fine that this becomes drowned in any other noise or sound however fine or refined it might be.

The current of air again proceeds onwards. When it reaches the extremity of the throat, it is known by the name 'Vaikhari'. The sound does not come out even here; but goes further

up and having struck at the crown of the head it is deflected. It then comes out through one 'Sthāna'—place of articulation or other, such as the guttural, palatal, etc. These various 'Sthānas' are conceived as so many tubes through which the Vaikhari sound derives its name from the tube through which it passes.

We must point out that the sound that comes up from the navel is nothing other than a current of air. This current of air when it leaves the Vocal tubes, comes into contact with the air outside, with the result that certain sonant air waves are created. These vibrations transmitted through the air-waves, at last reach our sense of hearing or simply we hear them, *i.e.* the sound. This sound, then enters the ear and through it, it goes down and reaches the 'madhyama.' This is capable of sympathetic response and as a result that particular 'Śabda' stands out there. This that stands out and that is part and parcel of Madhyama itself is what is known as 'Sphota.' The 'sphota' as we know it now, is therefore none other than a variety of Madhyama or technically a 'Vikṛti' of madhyama, the existence of which can be established as we have seen, by the hum or what is in grammatical technique known as 'Nāda.'

We shall make the relation between 'Madhyama' and 'sphota' clearer by means of an example. When wind blows over the ocean, we find waves are produced in it. We know that these waves are nothing other than water, only they have a peculiar form. Applying this to the case in question, we find the madhyama stands for the ocean, and sphota for the waves. The relation between sphota and the madhyama is the same as that between the waves and the ocean. The cause of the wave is the wind blowing over the ocean; while the cause of the sphota is the 'Vaikhari dhvani' striking at the Madhyama. Only in one point does the illustration not satisfy. The

shape of the wave is not determined by wind and the wave bears no resemblance to the wind blowing over it; but in the case of sphōta, the nature and shape of sphōta is entirely determined by the 'Vaikhari, Dhvani,' so much so that the Vikrti is the exact image of the Vaikhari.

This is in a nutshell the nature of sphōta. Now, the critic asks, does the acceptance of this Sphota remove the difficulty that has been pointed out. The Madhyama being 'nitya' the Sphōta does not die away as the bare sound. That is to say the ॠ of reflected सद्वाक् in Madhyama does not become non-existent as the ॠ which was the cause of this reflection. 'So so far good,' proceeds the critic, 'the Sphōta ॠ exists, but then how do you explain away the next objection that the ॠ is to be the ॠ that is to combine with the following letters. But this objection does not rise in case we accept Sphota. In the same way as we realise the existence of the Ego, so also do we realise that the ॠ is to be the ॠ in combination with other Vamas. Another answer and this is decidedly better, can be given; for some maintain that ॠ manifests not merely the ॠ but the whole word. If this view is accepted, it might be argued that the succeeding letters are useless but then these are necessary as giving the necessary intensity to the manifestation—as much as is necessary for the realisation of it.

Thus Patanjali has given us a definition of language which is as scientific, as if not more than, what is given by modern philologists. The only objection that may be brought against this—and this comes from the laymen—is that this is too scientific and abstruse and hence probably it may not appeal to all. Patanjali therefore gives us a second definition of language.

Bhāṣya.—Or again, in world, Śabda is said to be that sound, which is significant. Thus then, 'speak, don't speak, Mānavaka is speaking' So is said when a man is speaking.

This definition may be paraphrased thus: In every day language Śabda means that audible sound which conveys to us some idea; or still more plainly Śabda means significant sound. This is the popular conception of language and is based on the view that the sonant and the significant elements are one and the same. Hence says Bhāṣyakara

Bhāṣya.—Hence Sabda is the (audible) sound.

Thus our author has told us at length what is meant by Sabda *i.e.*, language. And this is as good as what the westerners have given us. This takes us to the end of the first section, if we may so term it, of this incomparable treatise on Language.

End of Section I.

DEVELOPMENT OF THE DRAMA IN MODERN TIMES.

(BY M.R.RY., KAO BAHADUR C. H. GOWD.)

Three centuries have already elapsed since the last great Hindu Empire, the Kingdom of Vijayanagar fell desiccated by the cruel hands of the Moslem iconoclast.

The conquering Karnatic warriors carried away with their banner their culture also

wherever they went. From the wave-washed Cape Comerin to the Kalinga's Coral beach, music and poetry, painting and sculpture architecture and engraving, left behind them relics of that glorious rule though that vast empire and its mighty rulers have long ago

disappeared from the arena, and are well nigh forgotten.

Along with other Fine Arts, Drama and the Dramatic Art in local vernaculars received a fresh impetus and took a new shape like architecture and sculpture and were improved very much to suit the refined tastes of the elegant and cultured citizens of the day.

At this juncture there lived in the very heart of the metropolis city a renowned religious bard by name Parandara Dāsa, whose name has been immortalized in the Karnataka for having systematized the present Karnatic school of music and placed it on a scientific basis. Gradually the charming melodies of these religious devotees were adopted into the Drama, and the innovation was hailed and appreciated by the learned and the ignorant alike.

Since then the South Indian Drama became quite inseparable from music. After the fall of this great Karnatic empire, Fine Arts naturally took refuge in the royal courts of Penukonda and Chandragiri and the Nayak courts of Tanjore and Madura. But within a space of one hundred years after the battle of Talikota, the conquerors were in their turn conquered by the Marathas under the lead of Sahaji and Sivaji the Great, princes of this family; their Brahmin Ministers the Peshwas became the patrons of Hindn Music and Drama. Another century had to pass by before the Drama took the modern shape and the credit of laying the foundation of the modern stage may be given to the chief of Jamkhandi This. Brahmin chief, a scion of the great Patvardhan family, got a Dramatic company started at his own place in the seventies of the last century, after the model of a Parsee Dramatic troupe, just started at that time by Mr. Pateel M. A., the pioneer of the modern stage.

Thus on the indigenous Kannada stage, the Marathas engrafted the best of the Western ideas blending them with those of ancient

Sanscrit stage canons and got dramas enacted in Marathi. Several successive waves of these reformed Dramatic Companies hailing from Jamkhandi, Sangli, and Ichalkaranji States, passed through Dharwar, Bellary, Madras Nellore and Berhampur in the North-east and Mysore and Tanjore in the south.

In almost ten years the Andhras caught the inspiration from the Marathas, and began to enact Dramas in polyglot Hindustani for some time till Rao Bahadur Veerasalingam Pantulu betook to write Dramas in Telugu.

The Tamilians who had ready made Music and Maratha influences in their old capital Tanjore at once responded and a dramatic company was started by the late Govindasami Rao of Tanjore. In the city of Madras also a dramatic company was started under the designation of "The Oriental Dramatic Company" at the instance of and under the patronage of Col. Macdonald the then Director of Public Instruction; and one Mr. Srinivasacharya a teacher in the Pachayappa's College enacted some of the Dramas of Kalidasa and Bhavabhuti in Sanskrit.

The province of Mysore the centre of modern Karnataka did not lag behind. Both its Ruler and his loyal subjects took the earliest opportunity of improving their old Karnataka stage. In the reign of Chikkadevaraya Mitravinda Govinda of Singaraya and the dramas of Basavali Sastry and Jayaranga-charya were represented. Actors like Rangacharya and Subbannah raised their stage to a much higher level under the direct patronage of their enlightened ruler H. H. Sri Maharajah Chamarajendra Wodeyar Bahadur.

Last though not the least, in the country round the ruins of Vijayanagar, where the old Karnatic stage existed in its pristine purity, there arose a new school of Histrionic Art and poets who were conversant with Kanarese and Telugu languages wrote dramas and exhibited them on the stage in both the languages.

Without contradiction Mr. D. Krishnamacharlu of Bellary who was both a great poet and an actor of great ability and fame may be said to be the pioneer of exhibiting Telugu dramas on the stage written on modern lines, Mr. K. Srinivasa Rao of the same place contributed much towards the making of the Telugu Drama, while Mr. P. Vencobacharlu, a brilliant Mathematics graduate of this university and my humble self, contributed our mite in reviving the glory of the Karnataka stage. In 1885 the elite of Bellary formed a Society and designated it as the Bellary Sarasa Vinodini Sabha with Mr. D. Krishnamacharlu as its first president wherein both Telugu and Kanarese

Dramas were played most successfully. Soon the Sarasa Vidodini Sabha of Bellary visited Madras for first time in 1890, and gave its performances. Rau Bahadur P. Sambandam Mudaliar, High Court Vikil a successful poet and an actor then started the Suguna Vilasa Sabha an amateur Dramatic Society following the lead of the Sarasa Vinodini Sabha of Bellary and contributed much to make up the Dravidian stage.

Since then a number of Societies both amateur and professional have sprung up from time to time in different parts of this presidency in imitation of the parent Societies.

WESTERN LOGIC. HOW THE THEORY OF THE MATERIAL CAUSE CAN DEVELOPE IT.

A point in Western Logic that is not laid sufficient stress on is the Theory of the Material Cause. The word *material cause* is not unknown to Western Logic, but it is not developed to its legitimate limits so as to influence the problems of Life in a proper way. As a matter of fact the theory of material cause runs counter to many of the metaphysical beliefs current in the Western Continent as not to receive the share of attention that it rightly deserves. What then is this material cause and how can it develop the Logic of the West if proper attention is paid to it?

Let us begin with a popular example. The carpenter takes a piece of wood and carves it into a ruling stick. The whole set of causes that produce the ruling stick are thus the carpenter, his implements, the wood that is carved, the will and a number of other factors. For ordinary purposes Western Logic recognises

the immediate cause or such a set of causal conditions and does not trouble itself with the other necessary factors. The wood is the material without which the ruling stick is impossible to be made and for the purposes of this article, we take it as the material cause. Where Oxygen and Hydrogen unite to form water, these two gases constitute the material cause whose combination resulted in liquid water.

The material cause thus persists in the effect. We may therefore define the material cause as that part of the cause on which the other causal conditions operate so as to alter it to the form in which it appears in the effect. The wood carved by a carpenter, the building materials that go to construct a house,—any material substance that is worked up to take any particular shape illustrate what the material cause is. The Smith that melts iron to make it into implements has this iron as his

material cause. The manufacturer who has cotton to make cloth has this cotton as his material cause. The material cause *viz* cotton persists in the thread into which it is drawn, and the thread persists in the cloth into which it is woven. We thus see that among the causal conditions, there is one which does not disappear after the effect is produced; and this is the material cause. The manufacturer's wish to make a particular quantity of cotton or yarn into cloth is completely satisfied after that particular quantity is so converted. The machinery no longer operates as a cause for this quantity after it has once operated itself and produced the result. The other causal conditions no longer persist in the effect and their satisfaction is the measure of the effect. But the material cause remains in the effect, after the other causes have operated on it to produce that effect.

What then is this material cause? In what way does it operate to produce the effect? If, by the efficient or ultimate cause an effect can be produced, can we produce water as an effect where its ingredients are not present? The substratum of matter on which the other causes operate is as essential for the production of an effect as these other causes themselves. Without the building material, nothing can be built, and gold cannot be dug out of a mine which has no gold. The presence of the material is a necessary condition on which the other causes should operate to bring about a result. Thus among the whole set of conditions required to produce an effect, the material that should be wrought into the effect must be included.

But it is not as a passive factor that this material cause exists. Where Hydrogen and chlorine combine to form Hydrochloric acid, the material cause *viz.*, the two gases Hydrogen and Chlorine have in them the capacity so to combine as to produce the requisite result. An essential condition then for

an effect is this: that the material out of which the effect is produced should have in it the potentialities of being made into that effect. No one can convert brass into Alcohol, or wood into a piece of radium. But it is not its fitness to be converted that alone makes it an essential cause. It is not potentiality alone, but something more than that that makes it an essential cause. Take Fluorine for instance. It is by nature an active element. It does not require other non-material causes to enhance its operation or shape it into the effect. The moment when Fluorine comes into contact with any other element—oxygen excepted—it attacks that element and forms a compound with it. This is an example of a material cause which operates unaided to produce a result, on account of its properties, which wait not for other non-material conditions to assist it from outside?

The material cause then is more than a passive factor that merely yields to the other operating causes; it resists any but the change it has under the conditions the capacity for.

We have thus a faint idea of this important factor of causation, which persists as a cause in the causal conditions, and as an effect in the effect produced. Nor is it merely a passive factor, because it does not yield to any but its own conditions. It is capable of itself operating as a complete cause where it can do so.

It thus becomes clear so far at least as the material world is concerned, that no matter can ever undergo a change to produce an effect unless the changing matter persisted in the effect, and that no effect in the province of matter can ever be produced without the material cause being thus converted. In other words, the theory of the material cause proves the theory of the conservation of matter. The material of a house that is burnt away is not lost, but has become the material cause for the new substances now formed. There is on

destruction of the material cause, but only its transformation. There is no creation, but only manifestation. The earth and planets, the sun and stars, and the stellar systems in this Universe are merely combinations of the chemical elements which are the material cause. We build up our bodies from the nourishment we take, just like the tree which grows into huge dimensions by the molecules of matter which it absorbs and assimilates. The material cause then is a fundamental factor in the theory of causation, and the stress that is laid by Western Logic on the ultimate cause slurs over this prominent factor which marks its defect.

The essential feature of a material cause being thus known, we have to see why in Europe this Theory did not receive proper attention. We have already hinted at it when we said that the theory of the material cause runs counter to many of the metaphysical beliefs current in the western continent. The fundamental assumption of all Induction is in the Uniformity of Nature. Nature is not capricious; its Laws are universal. The composition of water does not change from age to age and place to place but it is fixed once for all. Given a set of all the conditions required to produce a result,—conditions both positive and negative—the result necessarily follows. Under the same circumstances the same effect must be produced and nature knows no deviation from its Law. No material body is ever produced without the material atoms contributing to it. Chemistry falls to pieces if a material cause is not necessary to produce a chemical effect. The bodies of men, animals and plants have their material cause in the atoms that constitute them. The question naturally arises—how then are the worlds produced?

We need not here discuss the question of a Will at the back of things acting as one of the causes contributing to an effect. But what is

the material cause that by the operation of that will was transformed into these worlds, itself persisting in the effect? If there is no material cause, nothing can come of void space, and Causation insists on a something existing before the worlds are produced which is persisting in every atom of matter now. If it is said that the material cause is the will itself, the doctrine of creation is gone, and we come to real Pantheism. If it is said that there is a material cause in addition to the instrumental cause *viz.*, the Will, then there is no creation, at all. On the other hand this postulates two eternal existences, instead of the One only without a second which is destructive to the original doctrine. If it is urged that there was no material cause at all, we assert a scientific impossibility for without a material cause, material effects are never possible.

The awkward position that the recognition of the Law of the Material Cause places the Western beliefs in is responsible for the scant treatment of an important branch of Logical study in those countries, and it is high time that scholars should rise over their prejudices to accept this doctrine which a genuine love of truth necessarily favours. There is no material effect without the material existing previously to the effect and transformed into it.

The material cause is thus a fulfilment of the demands of physical sciences. It is a much needed principle of causation tacitly assumed in every science, though it is not discussed in so many words. In Astronomy, no stellar body is formed, no planets, comets, or satellites, but there is only building up of these bodies through the arrangement of pre-existing material is patiences in space and by force. In geology, botany or any biological science no material is produced except by the material particles undergoing transformations.

Even in Normative Logic, it is the theory of the material cause that can perfect our ideas of Causation, and without this principle

Logic like astronomy before Galileo would be like a horse held by strings unable to benefit as it ought to. It is a sorry spectacle to behold that even in the twentieth century the principle is not able to find free development in centres of

so called civilisation and it is hoped that the conflict that science always had in that continent for its free progress shall disappear at least now.

OUR BOOK SHELF.

MEGHADUTA

[MEGHADUTA BY BALACHARYA GOPALACHARYA
SAKKARI *alias* SANTAKAVI].

This is a translation by this gifted poet of Dharwar of the work of Kalidasa. Santakavi is an inspired poet of modern Karnataka and his translation is most beautiful. In reading this poem one thinks that he is reading one of the great poets of ancient days. The poet is a venerable old gentleman of more than seventy years.

VIRAHA TARANGA.

This is another Kanarese translation by the same poet. Its original is the famous *Gita Govinda* of the Sanskrit Poet Jayadeva. *Gita Govinda* is one of the classical works of Sanskrit and the Translation of Santakavi is most beautiful. In his introduction to this translation the author says that Jayadeva is a Kanarese poet. It is however the opinion of some scholars that Jayadeva was the son of Bhojadeva and Vamadevi and that he was a Kayastha Brahmin of Tindubilva. He was the famous court-poet of Lakshmanasena, of Bengal, and we have an inscription of this King found at Gaya and dated Samvat 1173 or A. D. 1116. There is another poet Jayadeva—who lived in Vidarbha (Bedar) and studied under Harimisra. This Jayadeva is said to be contemporary of Appaya Dikshita of the time of King Krishnaraya (A. D. 1509—1525). *Prasanna Raghava* is

the most famous work of this Jayadeva. It is not decided beyond doubt whether the two Jayadevas are identical. The present work is a translation of the work of the first Jayadeva.

The Kanarese public are deeply indebted to this famous translator for his able soul-stirring translation.

ESSAYS ON KANNADA GRAMMAR.

These are essays, written in the Kannada language by M.R.Ry. R. Raghunatha Rao B.A. —a retired educationist of Mysore, and the Secretary of the Karnataka Sahitya Parishat. Mr. Raghunatha Rao is one of our greatest Kannada Research Workers, and his researches extending over a life period of more than forty years have done much for the Philology of this important language. The author divides his work into two parts; the first part treating of the nature of this language, and the second part the new grammatical forms in it.

The author begins the work with a discussion of the division of languages into Gauda and Dravida, and gives a short account of each of the Dravidian languages—Telugu, Tamil, Malayalam, Kanarese, Tulu, and Kodagu. He then speaks of the interrelations of these South Indian Languages. The following points are illustrated.

(1) *k* and *g* of Kanarese appear as *s* in Tamil and *c* in Telugu.

Thus *Kan*— Kivi, Gey— *Tamil* Sevi, Sey, Telugu chevi,

(2) There is some relation between *s* of Kannada and *y* of Tamil.

Kan Sāsiram. *Tam* Āyiram.

(3) *ṇ* of Kannada becomes *n* of Telugu.

Kan Maṇ, *Telugu*, Mannu.

(4) Words beginning with *v* in Tamil begin with *b* Kanarese.

Thus *Tam*. Vil— bow; *Kan* Bil

(5) *L* of the other Dravidian Languages becomes *r* in Tulu.

Kan Bil, *Tam* Bil, *Tulu* Vir,

After discussing some of these characteristics the learned author proceeds to the numerals, pronouns and verbs of these languages and thus establishes the fact that the Dravidian Languages belong to one and the same group.

He next takes up the question as to whether the orthodox opinion that our languages are derived from Sanskrit can be established. He then points out.

(1) That the portion of these languages which is independent of Sanskrit is more than the portion which is dependent on it.

(2) That the words in common use such as those for father, mother etc., are independent of Sanskrit.

(3) That the pronouns, numerals, many verbs and terminations are purely indigenous.

After a further discussion of this topic, the author points out the common element in Sanskrit and Dravidian. He then takes up the relationship of Modern Kanarese to Telugu, and to the other languages of the Group. This closes the first part of this interesting work of Research.

In the second part of this work, he discusses the antiquity of the Kannada Language, and speaks of the periods in its history. He then speaks of the chief changes that the linguistic forms had undergone from period to period and reserves a further discussion of the topic involved to the third part of the book. The book is in the Kannada Language and deserves the study of every Kannada scholar.

DEVAMANI.

This is a Telugu Romance adopted from the "Dive for Death," of Rao Saheb T. Rama Krishna Pillai. Mr. M. Vankata Ratnam who adopted this into Telugu says in his foreword that the style adopted in this book is purposely simple and free from unnecessary Sanskritisms—avoiding Pedantry on the one hand, and *Granya* on the other. The language is no doubt very simple. We hear that this little book is prescribed for the Intermediate Examination in Telugu. Mr. Venkata Ratnam has already written several books in Telugu and Devamani is his latest Production.

THE RESEARCH MOVEMENT DAY BY DAY.

Wood National College, Madanapalle.

"The Principal of this College approves of the Magazine and says it promises to be a good one."

M. R. Ry. M. Venkatakrishnayyah Ail.

"The Magazine is very promising and bids fair to become a very useful journal. I wish every success to you in your undertaking."

New India.

5th August 1918.

Under the above title, the first number of a monthly journal is issued, under the editorship of Mr. T. Rajagopala Rao, B.A., to encourage research in "Art, religion, Philosophy and Mythology, Sciences, Language, History, Anthropology, and in particular everything of Antiquarian interest." We warmly welcome this most useful effort, and heartily wish it success. Its Editor says ;

The South Indian Research will, to the utmost of its powers and means, try to do what all is possible in these and other branches of knowledge. Our Journal thus belongs to the class of Indian Periodicals of the type of the *Indian Antiquary*, the *Journal of the Royal Asiatic Society* and the *Journal of the Mythic Society* ; and of Western Periodicals of the type of *Mind*, *Nature*, etc. Its purposes are mainly academic. It is intended for the learned new, yet the treatment will be popular.

All who are interested in Indian Research—and what educated man is not?—should subscribe to this brave journal and help it to continue.

The West Coast Reformer.

9th August 1918.

A monthly journal bearing the name of the "South Indian Research" has been started in Madras (Vepery) with objects explained by the name itself. Literary, scientific and other researches are to be treated in the journal for general information. The need for research in every direction—especially in science—is very pressing in India. The strongest impetus to research is provided only by the needs and difficulties of industries, though academical experts incessantly prattle about a mind for research and knowledge for knowledge's sake and such other shibbolaths. Research in science should as far as possible be associated

with business enterprise, which is ultimately to gain by knowledge. This does not mean that men having aptitude and means should not devote themselves to research without immediate object. Research scholars are now-a-days increasing in India, and we have no doubt that a journal of this kind will serve an excellent purpose in publishing the valuable results of research and in giving an incentive to genius and patience.

The Indian Messenger.

11th August 1918.

We acknowledge with thanks the receipt of the first number of a new journal which has been launched into existence at Madras called the "South Indian Research." It is intended to be a medium for the publication of the results of "critical Research in fields of academic thought" in South India. The articles on "How to recover our lost literature in Telugu and Kanarese," and "The wonders of radium" are worth reading. We hope that in future the editor will use his critical sense to exclude articles which parade ante-diluvian ideas such as "The Hebrew was the oldest language in the world," "The deluge occurred at B. C. 2549." "In B. C. 2218 occurred the building of the Tower of Babel." We wish our new-born contemporary a long and useful life.

The Kistna Patrika.

"A new English magazine has been recently started with this name "The South Indian Research." Its editor is Mr. T. Rajagopala Rao B.A. His name is very widely known all over the Andhra territory on account of the many books he has written in the Telugu Language. The paper deals with religion, Philosophy, history, science, language and other subjects...We have a word to say with regard to Researches. Western Scholars and especially the German Savants made great

Researches in many matters relating to Ancient India and established new theories.....But our Indian Research scholars are now discording in many cases the results of such western Research. The Westerners cannot grasp the real nature of things, however impartially they may read our books. The false theories which these western scholars have been led into are due to their interpreting the Orientals according to the standards of life in the Western Continent. Even great national scholars like Dr. Bhandarkar fell a prey to misconception by following the western methods of criticism. We hope that Mr. Rajagopala Rao will not in his Researches adopt the purely western methods, but also his own independent methods of work and thus achieve the end in view."

[We are thankful to our contemporary for this statement. This is exactly why the present Journal has been started. And this is what we meant when in our opening leader we said "These (the Dravidians) many well aspire to have a Journal of *their own*, which includes every kind of Research." We want that Indians should have a free hand in these matters and should not be dependent wholly on Western representations. In a word, the South Indian Research is in these matters, thoroughly *Indian* as distinct from the foreign. It is the want of such a Journal that did us so much mischief in the past. As we remarked already "Eastern patience and western perseverance must go together so that the work of criticism initiated by the Western scholars may be followed up in a critical Indian spirit. We stand for Indian Research and Indian opinion. The beginning was however made by European Scholars. So we love them and respect them. Let us follow up the work of criticism they have so auspiciously begun for us. Ed.]

Indian Mathematics.

In an interesting article on "Greek influence on Hindu Mathematics," in the East and West, Mr. G. R. Kaye, says.

"In medicine, sculpture and the drama, points of contact with Greek civilisation have been established, while the Hindu science of astronomy and astrology have been proved to be off-shoots of Greek Teaching.....Recent investigations show that in Mathematics also the Hindus were, if not wholly, to a great extent indebted to the Greeks."

This is the old tale again, which wants to trace everything Indian to the Greeks and if possible to a date later than that of Alexander. Mr. Kaye thinks that we have borrowed many important facts of our Mathematics from the Greeks. Thus

"The Hindu astrological and astronomical works of the period employ many Greek terms, e.g. Trikona (Gk Trigonon), harija (Gk horizon), hora (Gk hora), lipta (Gk Lepton), Panaphara (Gk. Epanaphora) etc."

"The chief mathematical content of the Paulisa Siddhanta (of Varahas Mihira) consists of a table of *sines* and two important trigonometrical rules; and these constitute the earliest known record of the *sine* function. The table of *sines* is taken direct from Ptolemy's table of chords, and the formulae are exactly Ptolemy's with *sines* substituted for chords." Is it not a fact that Ptolemy was in India for some time? Might it not be said that Ptolemy learnt this from India, rather than ancient India borrowed from Ptolemy these trigonometrical ratios? Mr. Kaye had certainly established similarity and he might have proved the case rather than assert that similarity connotes borrowing from the Greeks.

The writer continues his article. "Arya-bhatta's mathematical contribution, as handed down to us is extremely crude, but it contains three notable rules: (1) a very accurate Value of π (2) the rule known as *spanthama* (3) a rule for solving simple indeterminate equations. Arya Bhata's Value of π (3. 1416) was at one time made much of, but we now know that it was obtained from Paulisa" It does not matter

much if India is indebted to the Greeks, but what we want is a proof—not an assertion.

The rule of evolution is to pass from the crude to the more perfect. If Aryabhatta's work is extremely crude as it came down to us and yet contained three and notably three important rules, we fail to see why this hypothesis alone—*viz* that they must have been borrowed from the Greeks is all that is warranted. Still *more than one writer* has thought that Aryabhatta was indebted to the Greeks.

Allaya Vema Reddi.

The latest issue of the Epigraphica India publishes a grant of Allaya Vema Reddi. The inscription says that from Brahma came the Pantakula. Among its monarchs was Doddā of Polvōla Gōtra who had three sons Anna Vrōla, Kōṭayā, and Alla. The youngest Allada conquered King Alpakhana and with the help of Gajapati, Lord of Karnāta, defeated Kōmati Vēma at Rameswaram and ruled the country of Rajamahendra. Allada married Vēmambika, daughter of King Bhima of the Choda race. This illustrious couple had four sons Vēma, Virabhadra, Doddā and Anna. From Vēma and Virabhadra arose a capital city named Rajamahendra and this was ruled by Vēma. This King Vēma performed *Go-sahasra* rites at Dākshārāma and "conquering the valiant Kings of Sapta Mādiya, and marching over the land of Kalinga in magnificent fashion set up at Simhadri (and) Purushothama Pillars of his conquest. King Vēma married the daughter of a son Kātaya's (son) king Vēmaya, the daughter of Prince Kāta, the daughter's daughter of King Harihara, who ruled the four oceans—the fair lady bearing the latter's name, Hariharāmba—together with the fortune of his Kingdom." It is this King Allaya Vēma that made in Saka year "measured by flavours (six), elements (five) and Visvas (thirteen), in the cyclic year Ananda on the lunar day when the new moon

of Jyeshtha was first seen, a Monday during the holy eclipse of the sun" a grant of Vedurupaka and Pinamahendrada on the Tulya Bhaga branch of the Godavari to the Brahmins. He made the two villages into one and called it "Allada-Reddi-Vemavaram.

A Brahmin inscription of a very early date found at Sittannavasal reads thus.

Top

eō mi nā t [n] Kn mu th [ū] ra (?) pi Iu na
tā kā v [u] t [i] i tē nā kū chi tū pō chi la i l [a].

Continuation on left side.

gha (?) ra che (gha) (?) to (o) a (su) (?) ; a a
nā ma.

"Perhaps," says the Govt. Epigraphist "they (the above letters) commemorate the names of mendicants who had resolved to spend the last days of their lives in retired seclusion." Can any of our readers interpret the inscription to us?

India in the Archipelago

Yet another article from the erudite pen of Dr. Radhakumud Mookerji M.A.P.H.D. P.R.S. Vidyavaibhava to the columns of the commonweal on a "Glimpse into Greater India," speaks of how Hindn civilisation had developed Further India.

"India for centuries sent out streams of colonists and emigrants to countries in the Far East, including Pegu, Siam and Combodia on the main land, and to Java, Sumatra, Bali and Borneo among the islands of the Malay Archipelago.

As Mr. Smith observes in his history of Indian Art "the reality of the debt due to India by those distant lands is attested abundantly by material remains—by the existence to this day of both the Buddhist and Brahminical religions in the island of the Bali to the east of Java, by Chinese history and by numerous

traditions preserved in India, Pegu, Siam and the Archipelago."

The learned Doctor points out how the Mahayanist Doctrine of the great Audhra, Nagarjuna spread into Nepal, Tibet, China and Further India and the Archipelago, like Hinayana which influenced Ceylon, Burma, Siam and Combodia."

Turning to Art, we can begin "with Eastern Java where art was both inferior in quality and posterior in time," and its "most representative specimen is an old Buddhist Sanctuary of which the present name is *Tjandi Toempong*.....The sanctuary is mounted on a three fold terrace one rising above the other. In the first terrace we meet with a set of legends, evidently taken from the fables of the *Pancha Tantra*; the reliefs of the second terrace represent scenes of the *Rama* legend; those of the third terrace give the *Arjuna Vivaha*, Arjuna's Marriage, and especially Arjuna's fight with Siva; finally, the walls of the sanctuary itself are decorated with scenes of the *Krishna* legend.....But it should be noted that although the ornament is all Brahminical and as regards the sculpture cycles rather Sivaite, the monument itself was consecrated to the worship of the five Dhyani Buddhas, and of Three Taras or mystic powers. This is evident from the splendid statues representing separately the Dhyani Buddhas and their Saktis or Taras and bearing old Nagari inscriptions from which the significance of every statue can be clearly ascertained."

The learned Doctor then turns to a second group of monuments.

"In the Buddhist Sanctuary of Boro Budur, we have the whole story of the life of Buddha as told in the ancient Sanskrit work *Lalita Vistara*.....Another series of sculptures represents in continuous line more than thirty Jatakas, that is to say, more than all the Buddhist monuments of India Proper and Afghanistan contain. Besides there is another

sculpture cycle of more than sixty highly refined reliefs, illustrating according to Foucher, scenes from the *Divyavadana*. It should also be noted that one of the characteristic features of the Hindu artists in Java is that they decorate the walls of these monuments not only with detached sculptures and statues, bearing on topics of Indian Religion but also with a continuous line of scenes representing whole cycles of legends. Thus the monument of Boro Budur presents no less than two thousand bas reliefs of which more than two hundred arranged in two series, one above the other, are connected, as explained above, with the stories of Buddha as they were current in the Mother country."

Here then is ancient India's great glory. In the matter of civilisation India extended from the farthest islands of the Archipelago to the west perhaps beyond the Arabian Gulf.

Mr. Mathai speaks in his Village Government of an inscription of the ninth century A.D. discovered in Tinnevely which lays down as a rule for the conduct of the village assembly that members should in no case persistently oppose by saying "Nay, Nay" to every proposal brought before the assembly. We wish we could isolate the inscription and publish it.

The Hindu Garuda Purana.

The ideas contained in the Hindu Garuda Purana seem to be at least 7000 years old. Egyptian History begins in 4977 B. C. and even at that early date they have a book of the Dead. It must be noted that the Egyptian kings have the vulture emblem, and bear according to the Hieroglyphic Inscriptions, the title of "Lord of the Vulture." Just imagine the Lords of the Vulture having a book of a Dead which treats of the descriptions of the voyage after death into the other world. The Vulture is our Garuda and our book of the Dead is the Garuda Purana. We quote the following from a portion of this

Egyptian book, where before the tribunal in the other world the soul has to make its defence in this wise:—

"I have never committed fraud ; ... I have never vexed the widow ; ... I have never committed any forbidden act ... I have never been an idler ; ... I have never taken the slave from his master ... I never stole the bread from temples ; ... I never removed the provisions, or the bandages of the dead. I never altered the grain measure, ... I never hunted sacred beasts ; I never caught sacred fish ; I am pure ; ... I have given bread to the hungry ; water to the thirsty ; clothing to the naked ; I have sacrificed to the Gods ; and offered funeral feasts to the dead".

The Island Universe Hypothesis :—

According to the hypothesis newly propounded our stellar system and Milky way are great spiral nebula which we see from within. The stellar nebula which we see as such are other stellar systems far remote from ours. The data for calculating velocities is very meagre. Yet Dr. Slipher thinks that the average radial velocities of the spiral nebulae indicate that the solar system and the vast stellar system to which it belongs are moving, with respect to the average positions of the spirals, at a speed of about 435 miles a second, toward a point about R. A. 32 hours and S. Decl. 22 degrees.

Proxima Centauri :—

Mr. Innes of the Union Observatory, Johannesburg discovered a faint star in Centaurus, which has the same parallax as Alpha Centauri. More accurate observations

extending over a period of one year were made at the same observatory with a micrometer attached to a nine-inch equatorial and these give a resulting value of 0.759 sec. and not 0.88 sec. as at first announced. This is therefore the nearest known star in the heavens, and is given the appropriate name Proxima Centauri. Its visual magnitude is 11 and the Photographic magnitude 13.

A new way of Improving business :—

The motion picture exhibition of British Industries has organised a tour to 85 of the principal cities of the world with films illustrating the manufacture and use of British made goods. To these exhibitions representatives of the prominent firms of the cities visited will be invited. To improve its trade Germany opened show rooms in several cities of Poland whose authorities enrol members and negotiate with merchants. Similar methods can well be adopted in India for Indian goods.

Stellar Distances :—

We have to use figures exceeding millions, billions or even trillions of metres, when we express the distances of the stars or make calculations about them. A full expression of figures is unwieldy and much time and space is gained by using symbols for it. Mr. Pailhade, President of the Committee for the propagation of the decimal system has accordingly proposed a new symbol *Us*. (Unit Stellaire) to express a unit of 10,000,000,000 Kilometers: A light year expressed in these units is equal to 946 *Us* and a parsec to 3,078 *Us*. The sixty one Cygni is 5,895 *Us*. The mean distance of the sun is 0.015 *Us*.

The South Indian Research Prize Competition

TWO PRIZES OF RUPEES ONE HUNDRED EACH WILL BE GIVEN ONE TO TELUGU—TAMIL AND THE OTHER TO TELUGU—KANARESE CONTAINING LISTS OF CORRESPONDING WORDS.

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- I No list should contain less than 2000 words. In the case of Telugu—Kanarese the list should contain not less than 2500 words,
- II The words should be arranged in alphabetical order as in a Dictionary and in the following way.
 - (1) The Telugu word spelt into English.
 - (2) The Same in Telugu characters enclosed within brackets.
 - (3) its meaning if it differs from the meaning of the Tamil word.
 - (4) the Tamil or Kanarese word spelt into English.
 - (5) the same in Tamil or Kanarese characters enclosed within brackets.
 - (6) The meaning.

(7) any note on it as to origin or history, its special character as archaic &c This may be given wherever the information is available.

- III The lists should reach the Editor of South Indian Research on or before the 15th of December 1918.
- IV The decision of the Editor after communicating with the Examiners is final and should not be questioned.
- V If more than one list appears to take the first place, the value of the Prize will be divided.
- VI The Editor has the right of awarding no prize at all if in his opinion the lists received are not satisfactory.
- VII The list or lists which have been given the Prize become the Property of the Editor, the South Indian Research, and the other lists will be sent back to their writers.

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